



NEW MUSICAL RHYTHM: TOWARD A REDUCTIVE ANALYTICAL METHOD FOR MUSIC SINCE 1900 A PORTFOLIO OF THREE WORKS

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NEW MUSICAL RHYTHM: TOWARD A REDUCTIVE ANALYTICAL
METHOD FOR MUSIC SINCE 1900

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by

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NEW MUSICAL RHYTHM: TOWARD A REDUCTIVE ANALYTICAL
METHOD FOR MUSIC SINCE 1900

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New Musical Rhythm: Toward a Reductive Analytical Method for Music since 1900 complements existing theories by examining modes of composition that exploit non-metrical structures. Rhythmic identities that avoid or reorient the emphasis of the barline constitute the material for investigation, whether asymmetrical or tempo affecting in nature. Analyses of the works in question function simultaneously as indicators of composer ingenuity and as laboratories for the methods of examination.

Following descriptions and definitions of my analytical approach, I explore excerpts from works by Stravinsky, Varèse, Lutosławski, and Carter. These examples encompass various rhythmic techniques, and follow a process of abstraction – beginning with surface (foreground) activity, then toward phrase structure (middleground), then to other large-scale temporal proportions (background). Brian Ferneyhough's *Adagissimo* entails a complete analysis, illustrating fore-, middle- and background levels for the entire work. This analysis synthesizes and exemplifies the types of rhythmic activity present in earlier examples, as an extensive application of both additive and tempo-fluctuating techniques.

BIOGRAPHICAL SKETCH

Christopher Gendall is the New Zealand School of Music Jack C. Richards Composer-in-Residence for 2010-11. His works have received performances in Europe, Japan, the United States and South America by such performers as the New Zealand Trio, Marcel Worms, the New Juilliard Ensemble, Brave New Works, Dinosaur Annex and the New Zealand Symphony Orchestra. He was recently awarded the 2008 SOUNZ Contemporary award (the premier annual New Zealand award for a new composition) for his work *Wax Lyrical* as well as an ASCAP Morton Gould Young Composer award in 2006 and the inaugural New Zealand Symphony Orchestra Todd Young Composer Award in 2005. Gendall holds Bachelors and Masters of Music degrees from Victoria University of Wellington. He has been involved in a number of festivals and conferences, including the 2009 Britten-Pears Contemporary Composition course, the Wellesley Composers' Conference, and the Royaumont *Voix Nouvelles* course. Select works are published by the Waiteata Music Press and Peer Music Hamburg, and recorded on Atoll Records.

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CHAPTER 1

FORMATION OF A METHOD

An analytical study of musical rhythm negotiates by necessity a broad range of methods and objectives. An investigation might take the form of a survey, consisting of condensed expositions of existing studies, augmented by apt diagnostic conclusions.¹ Another might model itself on the research of a correlating field – scientific or artistic – in order to extract inherent data from ubiquitous rhythmic patterns.² Theories of rhythm often concern themselves with the cultivation of a common language – paralleling those established for the discussion of melody, harmony and form.³

The present study likewise manifests its own motivation and process. Its primary focus is to clarify a number of rhythmic procedures, exposing their impact-creating mechanisms. The procedures in question center on rhythmic practices that resist the hegemony of a predetermined metric pattern, phenomena that prove problematic for many existing theories. The pursuit of rhythm- rather than meter-driven practices – examining rhythmic activity beyond metric patterns – necessitates selecting certain repertoire. In this case I have chosen some post-tonal music from the last 100 years, a decision influenced partly by my musical interests as a composer, and partly by the

¹ This refers (not exclusively) to Jonathan D. Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies* (New York: Schirmer Books, 1988).

² Fred Lerdahl and Ray Jackendoff *A Generative Theory of Tonal Music*, The MIT Press series on cognitive theory and mental representation (Cambridge, Mass: MIT Press, 1983), in terms of scientific models; for an artistic model – poetry, in this case – Grosvenor Cooper and Leonard Meyer, *The Rhythmic Structure of Music* (Chicago: University of Chicago Press, 1960).

³ Kramer, *The Time of Music*.

often-inseparable nature of meter and harmony in tonal music. The modes of investigation are therefore designed to enable a discourse at once assertive and flexible enough to illuminate a diversity of rhythmic figuration.

It is also important to acknowledge the vast array of temporal issues present in many musicians' considerations. Duration, pulse, tempo, grouping, pacing and accentuation all infuse a composer's rhythmic language with definition and, in some cases, individuality. The interpretation of these parameters, drawn from aptly selected repertoire, comprises the data from which conclusions arise, providing the reader insights into rhythmic structure in a given work. They regard rhythm examined outside of – or in spite of – meter, and its behavior in a musical discourse, measuring its linear projection with a specific focus. Carefully isolated rhythmic strata explicitly inform my interpretations of both the musical surface and the procedural mechanism.

The investigation unfolds in the following way. First, a brief explanation of my external sources and their relevance: theories of rhythm, composer manifestos and technical writings, music biographies and surveys that exhibit important technical concepts. I also outline here the scope of techniques suitable for investigation, as well as the appropriate repertoire. Next, I detail the methods for analysis and presentation, defining descriptive and analytical terms. Methods are then tested in a series of practical applications. These examples serve to illustrate specific rhythmic procedures, and are categorized in various temporal transformations, culminating in the last example: an extensive application, accumulating a number of preceding rhythmic features. Finally, concluding remarks question and address the universality of analytical methods.

Existing Theories of Rhythm

As discussed above, existing theoretical studies of rhythm exhibit distinct analytical perspectives, many of which inform and complement aspects of this study. I refer in this chapter to primary sources pertaining to the concepts most informative for my work – the authors discussed here are those to whom this study is most indebted, and whose work provides significant background and precedent. (Other sources present themselves where appropriate.)

First, I direct the reader's attention to *The Time of Music: New Meanings, New Temporalities, New Listening Strategies*, by Jonathan Kramer, and *The Stratification of Musical Rhythm*, by Maury Yeston.⁴ Both authors include, among other material, detailed bibliographic information pertaining to theories of rhythm from certain historical periods. Yeston (whose analytical concepts I refer to below) provides a comprehensive list of rhythmic theories and treatises existing at the time of publication. The list is particularly comprehensive in its acquaintance with older theoretical writings, dating from c.350 B.C.E. to 1960.⁵ Kramer augments Yeston's list of more recent sources and, through astute isolation of salient concepts, devises a sleek discourse of analytical ideas. *The Time of Music* is not simply an elegant source reading, but a meta-theoretical view, posing hypotheses regarding the examination of temporal issues in music and music theory.⁶

Secondly, I should acknowledge the influence of rigorously managed analytical concepts, most notably Grosvenor Cooper and Leonard B. Meyer's

⁴ Kramer, *The Time of Music*; Maury Yeston, *The Stratification of Musical Rhythm* (New Haven: Yale University Press, 1976).

⁵ *Ibid.*, 1-34.

⁶ Kramer, *The Time of Music*, 5-12.

The Rhythmic Structure of Music, and *A Generative Theory of Tonal Music* by Fred Lerdahl and Ray Jackendoff. The former exerts a significant influence on more recent studies. Cooper and Meyer concern themselves with rhythmic structure in terms of hierarchy, accent articulation, linearity and grouping: all concepts that the present study references, directly and indirectly. Their concept of grouping is particularly significant for my work. I have chosen not to adopt their taxonomy of grouping categories: iamb, anapest, trochee, dactyl, and amphibrach – analogous to poetic meters.⁷ My method is designed to illuminate the interaction of durations rather than rhythmic – or metric – emphasis within groups of durations, and to include groupings that may not explicitly adhere to one of these categories.

Lerdahl and Jackendoff are concerned with the hierarchical structure of both pitch and rhythm. Their method likewise considers music as analogous to language (their rhythmic presentation is rendered similarly to that of Cooper and Meyer), however augmented with cognitive psychology associations.⁸ From both writings I derive certain analytical criteria – parameters that denote structural weight for the segmentation of rhythmic properties, groupings and emphasis. Also evident in my work is what Cooper and Meyer term “architectonic” rhythmic levels,⁹ Lerdahl and Jackendoff term “large-scale metrical structure,”¹⁰ and I term *middleground* and *background* structural levels. In this respect, William Rothstein’s *Phrase Rhythm in Tonal*

⁷ Cooper and Meyer, *The Rhythmic Structure of Music*, 6-7.

⁸ Lerdahl and Jackendoff, *A Generative Theory of Tonal Music*.

⁹ Cooper and Meyer, *The Rhythmic Structure of Music*, 2-3.

¹⁰ Lerdahl and Jackendoff, *A Generative Theory of Tonal Music*, 21.

Music is also influential, aspiring to activate rhythm as a parameter at the phrase level of Schenkerian analysis.¹¹

Lastly, the reader may note the influence on my work of two authors useful for discriminating structural devices. Yeston designates criteria implicit in the formation of meter and select rhythmic “dissonances,” devising methods for the rationalization of polyrhythms and syncopation.¹²

Christopher Hasty provides an ideal investigation into the formation of rhythmic “units” in contemporary works – particularly in passages rich in ambiguities of meter or pulse – in both his article “Rhythm in Post-Tonal Music: Preliminary Questions of Duration and Motion,” and the more extensive *Meter as Rhythm*.¹³ I find especially fruitful – in the latter – his emphasis on both structure and affect, acknowledging in his examples the formation of rhythmic identities by both listener and composer.

Composer-specific Writings

The authors listed above inform my research in its attempt to correlate musical examples, analyses, and descriptive language. Given this investigation’s contemporary music focus, it is also beneficial to consider certain writings by especially technically minded composers – manifestos, treatises and essays. In addition, I acknowledge here a number of concepts drawn from objective

¹¹ William Nathan Rothstein, *Phrase Rhythm in Tonal Music* (New York: Schirmer Books, 1989), 16-17.

¹² Yeston, *The Stratification of Musical Rhythm*, 122-123.

¹³ Christopher Francis Hasty, “Rhythm in Post-Tonal Music: Preliminary Questions of Duration and Motion,” *Journal of Music Theory* 25, no. 2 (Autumn 1981): 183-216; Christopher Francis Hasty, *Meter as Rhythm* (New York: Oxford University Press, 1997).

composer-specific writings: biographies, analytical studies and correspondences.

One composer text pertinent to my research is Henry Cowell's *New Musical Resources*.¹⁴ Cowell imbues acoustical properties of music – the overtone series, in particular – with structural and generative potential, in regard to both temporal and pitch-based procedures. In terms of rhythm, he articulates this through intervallic ratios designed to reflect individual overtones in a series, and applies these ratios to “time,” “meter,” “dynamics,” “tempo,” and certain interactions of these parameters.¹⁵ The use of such ratios influences my method. My terminology for these criteria differs somewhat: I would use the term “pulse” to describe “time,” and “accentuation” to describe “dynamics.” Although the concept of integral rhythmic derivation has since garnered significance in compositional design, at the time of the original publication – 1930 – Cowell's ideas represented a notably progressive viewpoint.

Karlheinz Stockhausen is a composer who applies these concepts in both music and prose. His article “...How Time Passes...” contributes further to Cowell's integration of acoustic and temporal phenomena by devising a broad array of musical possibilities: stimulating serial rhythmic procedures in both contrapuntal and hierarchical capacities – the concept of “fundamental phase” seems particularly apt.¹⁶ I derive further influence from Stockhausen's

¹⁴ Henry Cowell, *New Musical Resources*, 2nd ed. (New York: Something Else Press, 1969).

¹⁵ *Ibid.*, 47-98.

¹⁶ Karlheinz Stockhausen, “...How Time Passes...” *Die Reihe: A Periodical Devoted to the Developments in Contemporary Music* (Bryn Mawr, Pa: Theodore Presser, 1968), 10-40.

constant consideration of the perception of his concepts, assisted by the accessibility of recording technology and its capacity for experimentation.

Olivier Messiaen exposes a number of technical features of his compositions – and certain works by other composers – in two collections: *The Technique of My Musical Language* and *Traité de rythme, de couleur, et d'ornithologie*.¹⁷ Both works detail his unique approach to rhythmic material and procedures, most notably in the development of durational and additive processes. The first three volumes of the latter work deal with rhythm in considerable depth, examining – among others – his own works and those of Igor Stravinsky. Likewise Pierre Boulez, in his collection *Stocktakings from an Apprenticeship*, addresses similar rhythmic processes, with Messiaen's analyses as points of departure.¹⁸ In collaboration with Stockhausen's methods of rhythmic integration, Boulez examines "rhythmic cells" not only in terms of their durational identity, but also in their potential for transformation – by way of pulse manipulation by means of both rational and irrational values.¹⁹ Boulez also includes a detailed analysis of Stravinsky's *Le Sacre du printemps*. This analysis – alongside Messiaen's discussions of Stravinsky's technique – informs my approach to specific groupings in this piece, and I depart from his method with full consideration of this influence. Furthermore, I aim to fulfill his concept of "embryonic rhythm": an unadulterated expression of any rhythmic activity's underlying foundation.²⁰

¹⁷ Olivier Messiaen, *The Technique of My Musical Language* (Bibliothèque-Leduc, 831, 759. Paris: A. Leduc, 1956); Olivier Messiaen, *Traité de rythme, de couleur, et d'ornithologie: (1949-1992): en sept tomes* (Paris: A. Leduc, 1994).

¹⁸ Pierre Boulez and Paule Thévenin. *Stocktakings from an Apprenticeship* (Oxford: Clarendon Press, 1991), 47.

¹⁹ *Ibid.*, 47-54.

²⁰ *Ibid.*, 52.

In addition to composers' writings,²¹ two composer monographs impart significant influence on aspects of my investigation: Kyle Gann's *The Music of Conlon Nancarrow* and David Schiff's *The Music of Elliott Carter*.²² Both Gann and Schiff employ useful terminology to describe technical features of their subjects. Schiff devises a comprehensive taxonomy of technical terms and procedures to reveal in considerable detail the application of Carter's compositional design or intention. Gann, by comparison – and perhaps by necessity, given Nancarrow's imposed isolation and idiosyncratic medium – uses a more descriptive nomenclature. I reference extensively Gann's categories for specifically-composed tempo change: "arithmetic" and "geometric" acceleration and deceleration, where the former refers to durational change by adding or subtracting a unit pulse value, and the latter refers to durational change by a multiplication – increasing or decreasing a duration by a percentage, ratio, or series thereof.²³ I should also augment my acknowledgments of such authors with an article by Richard Toop on Brian Ferneyhough's piano piece *Lemma-Icon-Epigram*, which reveals not only Ferneyhough's process, but also the depth and breadth of scope for rhythmic invention in the work of Ferneyhough and others.²⁴

²¹ I should acknowledge here two manifestos that inform my investigation indirectly: Ferruccio Busoni, *The Essence of Music, and Other Papers* (London: Rockcliff, 1957); Arnold Schoenberg and Leonard Stein, *Style and Idea: Selected Writings of Arnold Schoenberg* (New York: St. Martins Press, 1975).

²² Kyle Gann, *The Music of Conlon Nancarrow*. Music in the twentieth century (Cambridge: Cambridge University Press, 1995); David Schiff, *The Music of Elliott Carter*, (Ithaca, N.Y.: Cornell University Press, 1998).

²³ *Ibid.*, 146-47.

²⁴ Richard Toop, "Brian Ferneyhough's Lemma-Icon-Epigram," *Perspectives of New Music* 28, no. 2 (Summer, 1990), 52-100.

Musical Examples: Scores and Composers

Existing theories and writings notwithstanding, this investigation's primary purpose is to illuminate its musical examples, which are excerpted from repertoire selected to expose specific rhythmic features. In the implementation of a descriptive (rather than prescriptive) analytical design, a cross-section of repertoire becomes the means to navigate a variable musical topography. The given list of works invites such an analytical focus.

Parallel to a number of authors already mentioned,²⁵ I examine – in some detail – Stravinsky's *Le Sacre du printemps*. Often referred to as the rediscoverer of the "ancient idea of rhythm,"²⁶ Stravinsky composed a number of the most prevalent examples of inventive rhythm. *Le Sacre du printemps* affords us clear passages of, most notably, additive rhythmic procedures – the augmentation or diminution of durations by a fixed pulse unit. In examining this work, I make reference to the aforementioned authors' most salient elements, and enhance them with new views. Included for further illustration in this capacity is Edgard Varèse's *Octandre*: aphoristic by comparison, yet replete with distinct passages exhibiting explicit, self-contained additive-rhythm examples.

Subsequently, I examine two works that feature tempo-affecting rhythmic practices, whereby the pulse fluctuates under the influence of polyrhythmic hemiolas. The first is *Musique funébre* by Witold Lutosławski, specifically the third movement – "Apogée." Lutosławski suggests in *Musique*

²⁵ Cooper and Meyer, *The Rhythmic Structure of Music*, 98-99; Yeston, *The Stratification of Musical Rhythm*, 30-31; Messiaen. *Traité de rythme, de couleur, et d'ornithologie*, 1: 97; Boulez, *Stocktakings from an Apprenticeship*, 55-107.

²⁶ Steven Walsh, *The Music of Stravinsky*, Companions to the great composers (London: Routledge, 1988), 44.

funébre – a work predating his work in the area of aleatoric structures – an expressive tendency toward idiosyncratic temporal motion, in this case by articulating dramatic accelerations and decelerations. Elliott Carter’s synthesis of polyrhythm and form also lends itself deftly to analysis. He treats pulse with an equivalently extensive flexibility, and the abundance of temporal structure manifests itself from the background to the surface. His piano piece *90+* exposes a number of rhythmic features in a rich, swiftly unfolding counterpoint.

Lastly, and in a similar regard to Carter, I examine the string quartet *Adagissimo* by Brian Ferneyhough. In an approach that often defies penetration – for performer or analyst – Ferneyhough’s rhythmic language exhibits perhaps the most assertive and elaborate application of temporal manipulation. A rigorous dissection of such densely layered mechanisms can inform a real-time hearing of such activity, a phenomenon as complex as the score itself.

The musical examples mentioned here promise discussion of a number of temporal issues, with one notable omission: metric pattern. These works and composers are all exponents of strong rhythmic character and development; all of them avoid repeated metric and hypermetric patterns – either ignoring the barline or shifting its orientation to create a temporal flow more asymmetrical than regular.

Herein lies the essential question: how can a theory quantify its results in the absence of metric division and subdivision? In order to obtain a definitive solution, we must effectively formulate a method and detail its emphasis. The solution, however, can be summarized by locating autonomy in the procedure’s structural mechanism, which, in this investigation, is assigned

to a grouping rather than a measure. Analyses duly ignore barlines, forming metric suggestions only through regular durational recurrence. Below is a detailed description of this study's terminology, presentation and methodological criteria, which, together with the aforementioned resources, form a framework for analytical implementation.

Methods and Definitions

My methods entail explanation in three categories: definitions and terminology, presentation, and criteria for analytical emphasis. These explanations refer retrospectively to the preceding body of research and prospectively to the analyses of repertoire that follow. (Presentations appear in musical notation, with the assumption that the reader is literate in notated rhythmic conventions.)

Considering aforementioned comments regarding its presence and absence, *meter* demands clear definition. Different authors assign meter different distinctions: either a repetitive and consistent emphasis on a pattern of impulses,²⁷ or a distinct rhythmic figure with latent regularity.²⁸ The latter, particularly in its perception, informs the concept of *hypermeter* – a larger-scale, gestural manifestation of a given rhythmic pattern.²⁹ I tend toward the former definition of meter and, as one would expect, a parallel definition of hypermeter, namely: a hierarchical and repetitive emphasis on a pattern of impulses. In the place of descriptions of latent metrical activity I would use the terms *rhythm* and *macrorhythm* rather than meter and hypermeter. As my

²⁷ Cooper and Meyer, *The Rhythmic Structure of Music*, 4.

²⁸ Hasty, *Meter as Rhythm*, 6; Kramer, *The Time of Music*, 82-84.

²⁹ Rothstein, *Phrase Rhythm in Tonal Music*, 8.

investigation yields its results from the interaction of durations, I deem it necessary to formulate autonomous rhythmic identities and objects as accurately as possible. Hence, I align my concept of the distinction of meter with that of Yeston: a meter's identity relies on consistent and congruous subdivision and superdivision, that is, a 4/4 meter is established by accenting – to some degree – downbeats and third beats, as well as the downbeats of every first and third measure, and so on and so forth.³⁰

The reader may notice that I use above both *emphasis* and *accent* to describe essentially the same phenomenon. A distinction arises when, as Cooper and Meyer discuss in differentiating between accent and their term “stress,” I examine the opening and closing of a group as opposed to the position of an accent within that grouping.³¹ In short, *emphasis* indicates the orientation of groupings; *accent* indicates the dynamic distinction within a grouping.

Grouping refers to a group of durations delineated by emphasis and accent. I – like Cooper and Meyer – consider grouping essential to rhythmic identity, and consequently to the interaction of structural levels.³² I choose not to exploit the existing taxonomy of rhythmic figures: iamb, anapest, trochee, dactyl and amphibrach.³³ Whether or not these figures arise in an analysis, I attach less significance to the identifying of groups than to noting their interaction and transformation.

Duration, in this study, indicates both an impulse and a group of impulses – existing within a grouping or, at a higher level, representing the

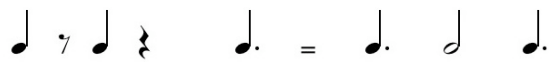
³⁰ Yeston, *The Stratification of Musical Rhythm*, 78.

³¹ Cooper and Meyer, *The Rhythmic Structure of Music*, 7-8.

³² *Ibid.*, 8-11.

³³ *Ibid.*, 6-7; Messiaen, *Traité de rythme, de couleur, et d'ornithologie*, 1:74-76.

collective duration of the grouping. Also, as a convenience, durations incorporate any rests that occur between attack points. This principle is demonstrated in example 1.1, in which the eighth and quarter note rests are absorbed by their preceding impulse. I consider this practice intuitive to a sleek approach for multiple strata, but perhaps less intuitive to the design of certain rhythmic techniques – particularly the integral serial techniques of Babbitt, Stockhausen and Boulez.



Example 1.1: Durational equivalence

In order to measure and describe durations accurately, *pulse* assumes significance as the unit of durational length. Example 1.2 demonstrates a rhythm constructed with different pulse units. The eighth note underscores the rhythms of 1.2*a* and *b*, the former subdividing accentuations. Example 1.2*c* and *d* operate at the sixteenth-note level with parallel rhythmic articulation. 1.2*e* is also a parallel rhythmic articulation, but without such visual immediacy. In this case the pulse unit is the triplet eighth note, with the same rhythmic values as durations: 2+3+4+5 pulse units. The inclusion of such diverse pulse types – and the flexibility to maneuver among them in a single passage – is essential to the investigation of a broad range of rhythmic procedures. Also evident in example 1.2 is the influence of *tempo* on analytical weight. Examples 1.2*a* and *b* can only be considered equivalent – in terms of accentuation – if the tempo is the same. Examples 1.2*a* and *c* are only equivalent if the tempo of the latter is half that of the former. Tempo is thus

the rate at which pulse unfolds, and this temporal equivalence – including the relationship of 1.2*e* to the previous rhythms – are duly exploited in the notation and presentation of this study’s analyses.

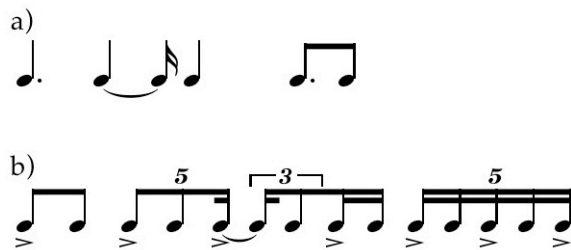


Example 1.2: Pulse Determination

We have already encountered Gann’s terms for notated tempo change: *arithmetic* and *geometric* modulation.³⁴ I use these terms more broadly in my method, namely: arithmetic rhythmic procedures differentiate adjacent durations by the addition or subtraction of one or more shared pulse units; geometric procedures differentiate adjacent durations by modulating the pulse unit with some kind of ratio as a modifier. Example 1.3 demonstrates this clearly, where both 1.3*a* and *b* articulate an acceleration: the first by consistent diminution of duration values by a sixteenth-note unit, the second by increasing the rate of pulsation by increases of 25 and 50 percent – 5:4 and

³⁴ Kyle Gann, *The Music of Conlon Nancarrow*, 146-47.

3:2, respectively. Example 1.3*a* is hence an arithmetic operation, *b* a geometric one. These are, no doubt, useful distinctions. The reader may find in a number of examples, however, a collaboration of these two phenomena, whereby geometric pulse operations underlie arithmetic durational augmentations and diminutions.



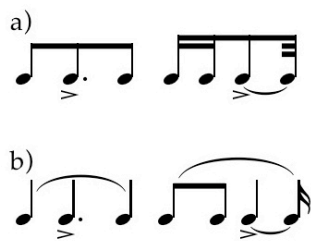
Example 1.3: Arithmetic vs. Geometric

Three terms that become increasingly significant are those that discriminate structural levels: *foreground*, *middleground* and *background*. I employ these distinctions in much the same way as Heinrich Schenker does to describe harmonic and contrapuntal interactions – as my notation reflects – to focus on distinct temporal levels.³⁵ Therefore, an analysis at the foreground level examines rhythms, durations and groupings; a middleground-level analysis examines phrase or gestural rhythm; background analyses illuminate formal pacing – the temporal proportions of sections.³⁶

³⁵ Heinrich Schenker, Ernst Oster, and Oswald Jonas, *Free Composition = (Der Freie Satz)*: Volume III of *New Musical Theories and Fantasies* (Longman music series. New York: Longman, 1979), 25-26.

³⁶ Although consonant with the methods in Rothstein, *Phrase Rhythm in Tonal Music*, 8, my methods apply “durational reductions” in more unfamiliar territory.

As discussed above, the presentation methods for this investigation center on musical rhythmic notation. Analyses thus read like percussion staves in a score, with durational values isolated and deployed without barlines. At the foreground level, each rhythmic impulse is vertically aligned in correspondence with the score – or piano reduction, where more appropriate. Groups are identified either by beaming durations together, or by slurs attached to the tails of notes. Ties, which indicate inclusion in durations, are attached to noteheads. These specifications are outlined in example 1.4, in which a rhythm occurs at two tempi – the second twice the first. Notice also the final tied duration, from notehead to notehead.




Example 1.4: Grouping Notation


Tempo indications assume increasing significance in the presentation of analyses, namely: my method makes extensive use of certain temporal equivalences. Metronome marks are attached to individual staves, groups, or durations in order to demonstrate rhythmic activity with clearly delineated pulse. Structural levels are distinguished by tempo indication. For example, a foreground-level analysis with a metronome mark of 60 might use a metronome mark of 30 at the middleground level of analysis, thus expressing durations with halved values. Metronome marks (henceforth “MM”) that

change frequently do so in order to demonstrate geometric pulse modulation, and to represent a passage's rhythmic motion accurately. Example 1.5 demonstrates temporal equivalence with two rhythms. The first modulates 1.5*a* by a ratio of 1:2 to result in 1.5*b* – $\text{MM } 100 \times 0.5 = \text{MM } 50$. Example 1.5*c* is modulated by a ratio of 3:2 – triplets – to result in 1.5*d*. The reinterpretation of the triplet is of particular interest here, as it presents durations and groupings uninhibited by a metric structure – that is, without regard to beats and barlines. Any tempo indication in an analysis reflects the original tempo directly by way of certain ratio operations. In theory, any ratio is possible, but some occur more frequently than others: 3:2 or 5:4, for example.


a) ♩ = 100




b) ♩ = 50



c) ♩ = 100



d) ♩ = 150



Example 1.5: Temporal Equivalence

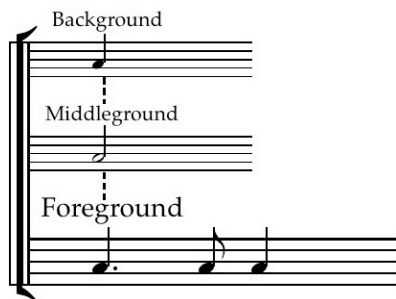
These methods of notation generally endeavor to present data with flexibility enough to accurately illuminate the rhythmic process in question, with information pertinent enough to the score to ensure convenient

correspondence. Certain arithmetic activities, for instance, are expressed in both rhythmic notation and in Arabic numerals beneath the staff, representing each duration's quantity of pulse units – outlined in example 1.6.



Example 1.6: Arithmetic Activity Notation

Information relating the analysis to the source ranges from passages fully notated beneath the staff, to measure numbers indicated above the staff. Where necessary, correspondences between structural levels appear as fragments within an analysis at a lower level: attack points salient to both middleground and background levels, for example, are indicated in fragments of staff above the foreground analysis, as demonstrated in example 1.7.



Example 1.7: Structural Level Interactions

Also in the interest of flexibility, analyses featuring certain species of rhythmic counterpoint may require multiple staves to fully express the activity in question. As a reductive method, I consider this essential to

reflecting both the simplicity of a process and the depth of its result. This method contributes less, however, to a streamlined theoretical framework than to a piece-specific approach.

Piece-specificity manifests not only in the presentation of analyses, but also in the range of criteria by which segmentation and structural emphasis is applied. These criteria fall into two categories: musical parameters and syntactical elements. In this regard, syntax refers to the discourse of musical elements, and their linear interaction over the span of a piece or passage.

I have defined temporal parameters – duration, tempo and pulse – above. In addition, pitch content, dynamics, articulation, timbre and texture all contribute to analytical decisions. Pitch content – harmony and melody, for example – clearly distinguishes structural weight. In tonal music, a structural accent might be more likely to occur on a tonic triad. In post-tonal music, harmonic density or a salient pitch-class set might engender greater emphasis.³⁷

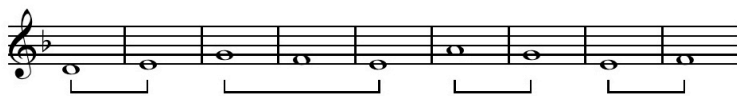
Dynamics and articulation likewise inform structural weight. Certainly, an impulse marked *forte* or *marcato* would be heard as more acutely accented than adjacent impulses not so marked. Moreover, and perhaps more universal a principle, variation and contrast of dynamics and articulation are particularly useful determinants of structural definition. That is, two adjacent passages using disparate dynamic or articulation indications tend to assume distinct identities.

Further, timbre and texture contribute to dynamic impact. The selection and interaction of instrumental, vocal or synthetic colors distinguish salient

³⁷ Allen Forte, *The Structure of Atonal Music* (New Haven: Yale University Press, 1973) 1-13.

emphasis in a passage, and, with the incorporation of texture – vertical simultaneity or horizontal projection of a textural concept – amplify dynamic distinctions. Were, for example, a *staccato* triad to be distributed as an orchestral *tutti* rather than between, say, three woodwind parts, it would assume increased structural weight or, at the very least, reinforce an emphasis already assumed. There are instances in which articulation, timbre and texture appear inseparable. In this study, these parameters frequently influence – as a unit – both horizontal and vertical segmentation.

Warranting inclusion as both a musical and a syntactical parameter is *contour*, the vertical shifts – and rate thereof – in a given horizontal line.³⁸ Rhythm becomes implicit even in *cantus firmi*. Example 1.8 features a series of whole notes, distinguishable only by means of pitch and contour. In this case, scale degrees 1 and 5 – D and A, respectively – assume increased tonal weight. It is, however, the changes in direction from which we can group these pulses to form higher durational values. One possible interpretation is given: grouping notes to form – in whole-note units – 2+3+2+2. Contour thus supports the influence of pitch content – especially melody – on rhythmic grouping and accentuation.



Example 1.8: Contour

³⁸ Robert Morris, *Composition with Pitch-Classes: A Theory of Compositional Design* (New Haven: Yale University Press, 1987), 27.

A term borrowed from Lerdahl and Jackendoff, the criterion *parallelism* refers to repetition – implicit or explicit.³⁹ Implicit parallelism regards repetition embedded in a structure, whereas explicit parallelism manifests at the musical surface. It must be said that parallel properties need not appear adjacent – there exist, for instance, parallel properties between the exposition and recapitulation of a sonata movement. Furthermore, as a principle, parallelism is beneficial in its reflection of adjustments to any repetition, that is, repeating any musical figure often highlights any change in its identity. The first two measures in example 1.9 share ample parallel properties: identical accent patterns – 2+2+3 eighth-note units – with slightly altered subdivisions. The third measure, however, alters the accent pattern (2+3+2), retaining only the duration of the measure.



Example 1.9: Parallelism

An additional criterion I borrow from Lerdahl and Jackendoff is the term *proximity*, relating to the temporal frequency of stimuli.⁴⁰ A group of impulses assumes a stronger profile the closer together they appear. In my method, I apply proximity as an authority for attack points rather than durations: seeking relative proximity from the point at which an impulse begins rather than where it ends. Lerdahl and Jackendoff employ in their

³⁹ Lerdahl and Jackendoff, *A Generative Theory of Tonal Music*, 45.

⁴⁰ *Ibid.*, 41.

theory a much more comprehensive list of criteria and principles for analytical interpretation. I design my criteria to prioritize the score over the listener's response to a score. Perception is undoubtedly a parameter in the measurement of a rhythmic object's effect. I am certain, nonetheless, that my assembly of criteria has the facility to illuminate and interpret a broad range of rhythmic activity.

Summary

Table 1 serves as a reference for viewing the analyses and accompanying commentaries on the passages and works to follow. Note particularly the definitions for *rhythm* and *macrorhythm*: terms that result and distinguish themselves from the preceding parameters. I intend to render rhythm and macrorhythm transparent apropos of their transformative operations. Isolating rhythm – durations, accents, grouping and tempo – from meter elevates the significance of transformative elements, formulating musical identity based primarily on its mechanism for change.

The aforementioned authors have, in different ways, articulated arguments salient to the present study. Some, however, consider problematic the types of rhythmic activity that form the primary materials for my work.⁴¹ I intend to pick up where they leave off: to venture farther into non-metrical rhythm than most comprehensive theories. Other authors concern themselves with my preferred types of rhythmic activity, usually at a single temporal

⁴¹ Yeston, *The Stratification of Musical Rhythm*, 149; Lerdahl and Jackendoff, *A Generative Theory of Tonal Music*, 296 ; Rothstein, *Phrase Rhythm in Tonal Music*, 13-14.

Table 1: Terms and Definitions

Term	Definition
<i>meter</i>	consistent, repetitive pattern of impulses, distinct from <i>rhythm</i>
<i>hypermeter</i>	a higher structural level of meter, distinct from <i>macrorhythm</i>
<i>accent</i>	dynamic distinction of an impulse within a group
<i>emphasis</i>	impulses marking the distinction of a group
<i>grouping</i>	an autonomous series of durations
<i>duration</i>	one or more pulse units , forming a single impulse
<i>pulse</i>	the lowest temporal unit of operation
<i>tempo</i>	the rate at which pulse unfolds
<i>arithmetic activity</i>	transformation whereby adjacent durations are differentiated by the addition or subtraction of one or more shared pulse units
<i>geometric activity</i>	transformation whereby adjacent durations are differentiated by modulating the pulse unit with some kind of ratio
<i>temporal equivalence</i>	the reinterpretation of a pulse unit by metronomic modulation
<i>fore-/middle-/background</i>	structural levels distinguished by temporal proximity, interpreting overall results of rhythmic groupings
<i>contour</i>	vertical direction and redirection of a horizontal line
<i>parallelism</i>	implicit or explicit repetition of any musical object
<i>proximity</i>	linear frequency of impulses in a given passage
<i>rhythm</i>	an autonomous temporal identity formed by groupings and their interactions
<i>macrorhythm</i>	rhythmic interactions at a higher structural level

level.⁴² I propose to synthesize these temporal levels and to represent their structural interactions accurately. Moreover, my music-notation presentation provokes visual manifestations of the procedures in question – representing temporal phenomena with rhythm itself rather than with data.

My focus is the practical application of this method of analysis. As I have stated, I consider my analyses descriptive rather than prescriptive, but these approaches are not mutually exclusive. Indeed, the application of this method is preoccupied more with elucidating existing rhythmic activity than with implementing a rhythmic technique for composers. One could imagine, nonetheless, the influence on music creation of a method that exposes causes and effects of relevant rhythmic mechanisms. This is perhaps an incidental phenomenon, but one I am content to facilitate.

⁴² Boulez, *Stocktakings from an Apprenticeship*, 11; Messiaen, *The Technique of My Musical Language*, 1; Stockhausen, "How Time Passes," 12; Hasty, *Meter as Rhythm*, 168-169.

CHAPTER 2

THE FOREGROUND

The previous chapter outlined presentation methods and preference criteria for the analyses in this study. In the interest of a logical succession of topics, select passages from the repertoire in question are organized to expose and emphasize certain specific types of rhythmic attribute. The current chapter examines rhythmic activity at the foreground level. In a reductive method such as this one, analyses corresponding closely to their scores illustrate surface activity directly and, by presenting the foreground level before the middle- and background levels, correlations between analysis and score are maintained throughout the process of abstraction. Further, given the music-notation presentation of my analyses, examples not only imply explicit visual connections between source and result, they also enable access to the construction of higher-level diagrams.

I categorize rhythmic activity – at the foreground level and higher – as either arithmetic or geometric. The arrangement of musical examples in this chapter draws a clear distinction: two arithmetic examples are followed by two geometric ones. Foreground rhythmic activity is thus classified by durations built with equal pulse unit values, and durations built with changing values.

I present the following analyses above a reduction of the excerpt to which they apply. These reductions are reproduced for convenience – they are not intended for performance.

Arithmetic Foreground Activity

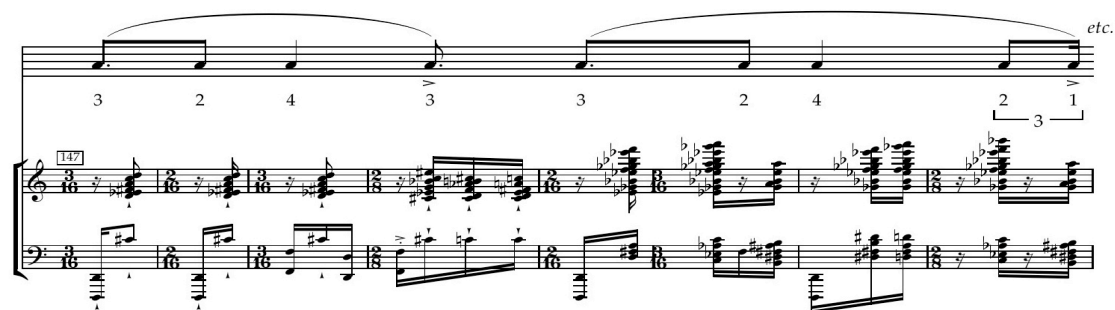
Example 2.1 presents a foreground-level analysis of the opening of the “Danse sacré” from Stravinsky’s *Le Sacre du printemps*.⁴³ The uppermost staff displays the durational reduction, complete with Arabic numerals beneath the staff, outlining – in sixteenth-note units – durational operations.

Foreground
♩ = 126

Example 2.1: *Le Sacre du printemps*, figs. 142-149, foreground

⁴³ Igor Stravinsky, *Le Sacre du printemps* = (*The Rite of Spring*): *Pictures of Pagan Russia*, Kalmus miniature orchestra scores, no. 78 (New York, N.Y.: E.F. Kalmus Orchestra Scores, 1933), 129-132.

Example 2.1, continued



To clarify grouping structure, I should begin by examining the initial five durations. Because I consider the first impulse of fig. 142 inclusive of a grouping prior to this passage, my analysis indicates that the rhythm in this scene begins on the downbeat of the second measure (directly following the fermata). It is this fermata that temporally distinguishes the previous section's end and the new one's beginning – injecting silence into a discourse dominated by continuity, interrupting the rhythmic flow. Although the chord in the first measure is almost identical to that in the next measure – in terms of pitch, articulation and dynamic – its immediate appearance after the bass clarinet's downward flourish suggests an interpretation whereby the chord is the final, interruptive punctuation of the bass clarinet's line (example 2.2).



Example 2.2: *Le Sacre du printemps*, fig. 142 and preceding measure

The four durations following the fermata (repeated in example 2.3) all comprise multiple impulses. The first notated eighth note constitutes both the bass note and the rebounding chord, as does the next quarter note. Both dotted eighth notes occur on the second pulse of their respective measures, instead of on the downbeat. Were these impulses oriented in a more metrically stable environment – 3/16, for instance – they would influence a clearly emphasized syncopation.⁴⁴ Instead, with the preceding eighth and quarter notes, the dotted eighth notes serve to amplify a sense of pulse. That is, by using consistent pulse units to augment and diminish the durations in the passage, those values added to or subtracted from durations assume a notable focus. In this case, the sixteenth note operates as a generative unit both within and between durations.



Example 2.3: *Le Sacre du printemps*, fig. 142, mm. 2-5

⁴⁴ My analysis of this passage assigns little emphasis to the barline. That is not to say that the metric design is of no importance, and would certainly influence any performance of this passage. I prefer not to emphasize downbeats (which could be called) tactile accents, unless (as in the Varèse example, pp. 33-39) they coincide with sonic accents. Although Stravinsky's notation suggests that some impulses are syncopated, the meter is not articulated through repetitive emphasis (as in the additional middleground excerpt, pp. 55-60). Structure, in this passage, is attributed more to pulse than meter.

Questions arise over the grouping selection in the final measure of example 2.3. The downbeat of this measure is a *sforzando* peak of a crescendo, punctuated in the trumpets (in the full orchestral score). Why then, would the next sixteenth-note claim structural emphasis?

It is essentially a grouping decision that defines any single duration's identity. The last dotted eighth-note duration in example 2.3 marks a harmonic change – in the upper voices, particularly. The downbeat of this measure is clearly the result of the chord and crescendo in the previous measure, suggesting inclusion in the first dotted eighth note of this group. Furthermore, parallelism suggests that the downbeat is not an elided attack-point, as the development – or reappearance – of the three-note figure indicates. As Boulez discusses, Stravinsky often deploys small rhythmic cells, between one and three durations in length, arranged and rearranged to yield a variety of rhythmic shapes.⁴⁵ These cells may not comprise distinct groups in my analysis, but certainly constitute building blocks for groups and phrases. Fig. 186 onwards clarifies this ambiguity, presenting the three-sixteenth-note cell without a preceding downbeat so heavily accented (example 2.4).

I select the groups in example 2.1 with a number of criteria in mind. Firstly, the initial chord assumes a referential identity in this section, often behaving as a platform for the construction of each phrase. In my analysis, this harmony begins each new group – with the exception of the final group, in which the chord appears altered in register, with other superimposed harmonic material. (The group beginning in the second measure of fig. 145 aligns its first attack point with the referential chord, rather than the more

⁴⁵ Boulez, *Stocktakings from an Apprenticeship*, 71; Messiaen, *Traité de rythme, de couleur, et d'ornithologie*, 2:93.

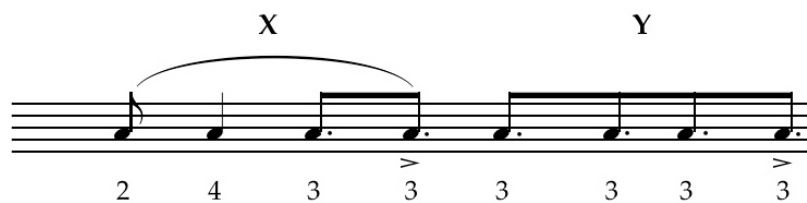
heavily articulated bass note in the following measure.) In addition, every group in this passage is end-accented, undergoing an increase in tension – in both harmony and orchestration. Lastly, the almost identical initial pair of groups enables a rhythmic palette for parallel and non-parallel grouping operations. The grouping structure in this passage thus reflects linear consistencies and transformations alike.



Example 2.4: *Le Sacre du printemps*, fig. 186.

The first two groups, reproduced in example 2.5 and labeled X and Y, share an external duration – both total 12 sixteenth-note units. The element in the score that distinguishes the internal configuration of these groups is the timpani note on the downbeat of the third measure (the second duration of X), absent in the corresponding measure – figure 143, m. 2 (the second duration of Y). The significance of this note reflects both my analytical method and the subtlety of Stravinsky's rhythmic transformation. I have already mentioned the requirements for the formation of durations, that they demand their own level of grouping structure. The distinction between the eighth-, quarter-note segment of X and the two dotted eighth notes of Y indicates the respective

inclusion and exclusion of the timpani note in question. Parallelism or, more appropriately, adjusted- or non-parallel structures also inform this distinction. Specifically, where a repetition of a group is altered in some way – like the distribution of pulses in the first two durations of X and Y – I deem it necessary to illustrate such a distinction.



Example 2.5: *Le Sacre du printemps*, figs. 142-143, grouping structure

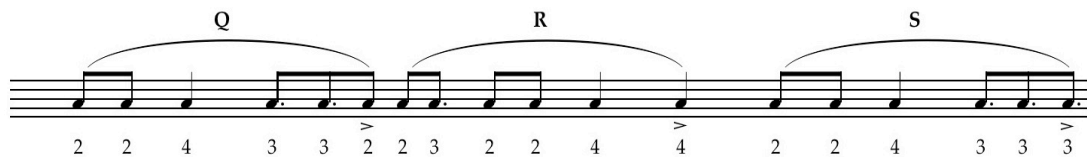
If the transformation between X and Y could be called an internal alteration, then that between Y and Z in example 2.6 – the second and third groups in this passage – would be an external one. That is, where Y reorients durations within X's unchanged group-length; Z diminishes the final duration in Y, shortening the group-length.



Example 2.6: *Le Sacre du printemps*, figs. 143-144 m.2, grouping structure

The fourth group in this passage comprises six durations, augmenting both the group length and quantity of components of the previous group. In this way, the fourth, fifth and sixth groups of example 2.1 (reproduced in example 2.7 and labeled Q, R and S) interact in a similar fashion to X, Y and Z,

namely, by either slightly augmenting the group length by one sixteenth note – as *R*, 17 sixteenth-note units does to *Q*’s 16 – or by reorienting duration lengths within adjacent groups – as *S* does to *R*, both accumulate 17 sixteenth-note units.



Example 2.7: *Le Sacre du printemps*, figs. 144, m. 3–147, grouping structure

The passage discussed above provides this investigation with a useful exponent of arithmetic rhythmic activity for both demonstrating my methods of durational and grouping identification, and for illuminating Stravinsky’s opposition of bold surface operations and subtle grouping adjustments. It is, however, at the middleground level that durational reductions expose rhythmic operations below the surface. In chapter three I access macrorhythm for this passage through further reductions of grouping structure.

Example 2.8 presents two foreground-level analyses of a passage from the second movement of Varèse’s *Octandre*.⁴⁶ There exist multiple editions of this work, with conflicting tempo indications. I prefer the most recent edition (revised by Chou Wen-Chung) which, perhaps for reasons of performative consideration on the part of the composer, marks the tempo as quarter note = MM 132, rather than MM 192 in the earlier editions.⁴⁷ Both analyses pertain

⁴⁶ Edgard Varèse and Chou Wen-Chung, *Octandre*, 2nd ed. (New York: Colfranc Music, 1980).

⁴⁷ Malcom MacDonald, *Varèse: Astronomer in Sound* (London: Kahn & Averill, 2003), 161; Jonathan W. Bernard, *The Music of Edgard Varèse*, Composers of the twentieth century (New Haven: Yale University Press, 1987), 236. I have also

directly to the surface, the sub-foreground illustrating the foreground's internal distribution of subdivisions. The foreground expresses its rhythms with smaller values – hence its half-time tempo indication: eighth note = MM 132.

Foreground
♩ = 132

Sub-foreground
♩ = 132

49 ♩ = 132

5 8 6 6 10

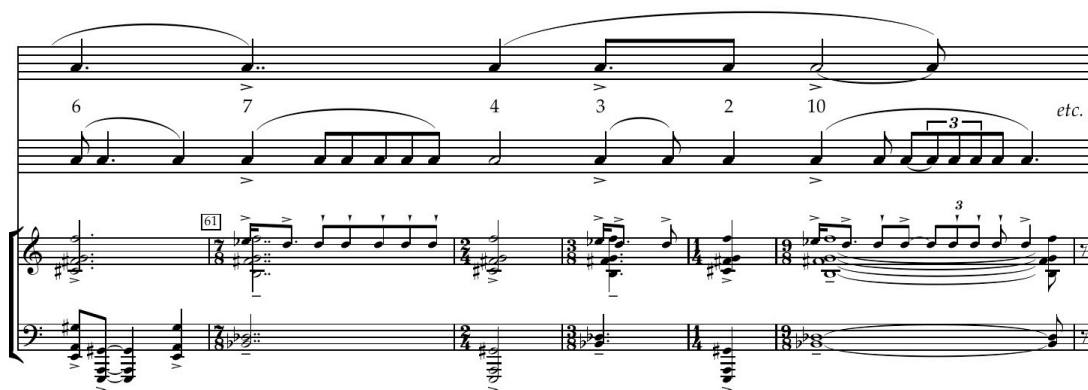
5 8 3 4 6

55

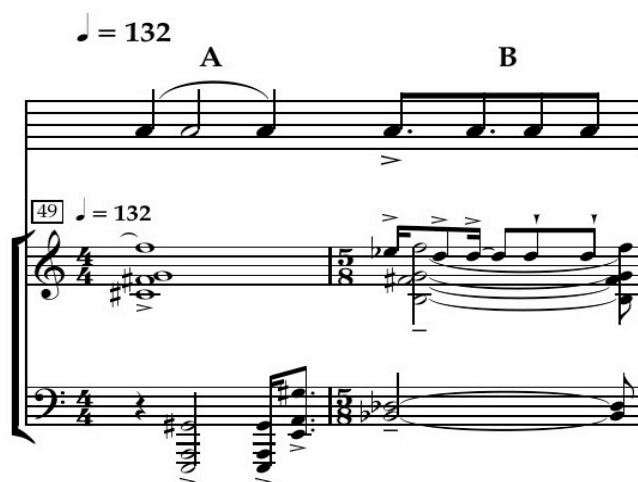
Example 2.8: *Octandre*, II, mm. 49-64, foreground and sub-foreground

notated meters with changing pulse values differently, expressing what Varèse calls “ $3^{1/2}$ ” as “ $5/8$,” for example.

Example 2.8, continued



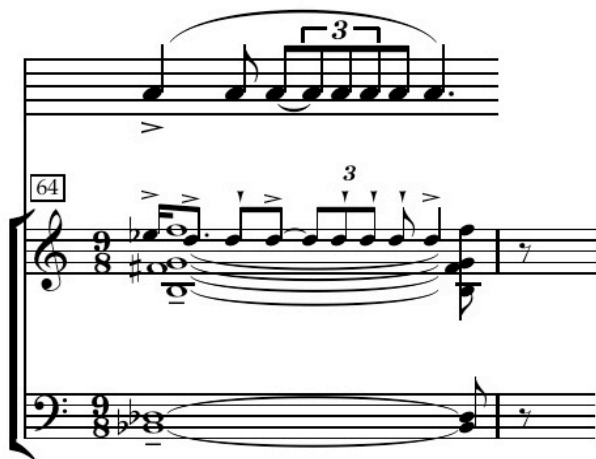
The distinction between foreground and sub-foreground is of particular interest here. The foreground expresses in durations the binary nature of the gestural discourse in this excerpt, that is, two oscillating static harmonies. (In this case, the oscillations are congruent with barlines, however serving to enhance a sense of downbeat less than an asymmetrical grouping structure.) The foreground thus represents the interaction of consistent elements, essentially exposing the “big picture” for this passage.



Example 2.9: *Octandre*, II, mm. 49-50, sub-foreground

The sub-foreground illustrates the internal motion of each oscillating element. Example 2.9 reproduces the sub-foreground analysis from mm. 49-50. Here the two groups – labeled *A* and *B* – each comprise two elements, distinguishable by the register – in *A* – of the bass chord, and the articulation – in *B* – of the clarinet line. I choose to assign every *staccatissimo* clarinet note as a duration (contributing significantly to the character of this rhythm), and to group together proximal, largely-unchanged *marcato* impulses (like the octave-transposed bass chord in m. 49).

The internal binary structure of each group manifests in simple and slightly more elaborate ways, depending on the length of the group in question. At m. 50, the clarinet articulations in *B* divide the group asymmetrically into two pairs of durations, marked by the articulation change from *marcato* to *staccatissimo*. The same material is presented with more elaborate grouping subdivision in m. 64 (example 2.10), where the two aforementioned types of clarinet articulation oscillate with changing duration values.



Example 2.10: *Octandre*, II, m. 64, sub-foreground

While the sub-foreground implicitly supports a binary analysis of the material in this passage, the foreground does so more explicitly, indicating clearly the arithmetic eighth-note operations that define this excerpt's rhythmic motion. Example 2.11 isolates the foreground (with numerical representations of sixteenth-note quantities, at its slower tempo marking). I have chosen to accent the second duration of each pair, a decision not necessarily supported by all musical parameters in the score. The chord in m. 49 is marked *fortissimo*, and in m. 50 all instruments except clarinet are marked *mezzo-piano*. Harmonic condensing, increased rhythmic density (in the clarinet line), and register, however, influence my emphasis on the second duration in each pair – in spite of dynamic markings.

Grouping structure in a surface so continuous proves somewhat problematic. (This section essentially forms its own self-contained, large-scale group.) In example 2.11, I present these durations in groups of four impulses each. This is not an arbitrary decision, but one that requires further discussion of the arithmetic mechanism at work in this excerpt.

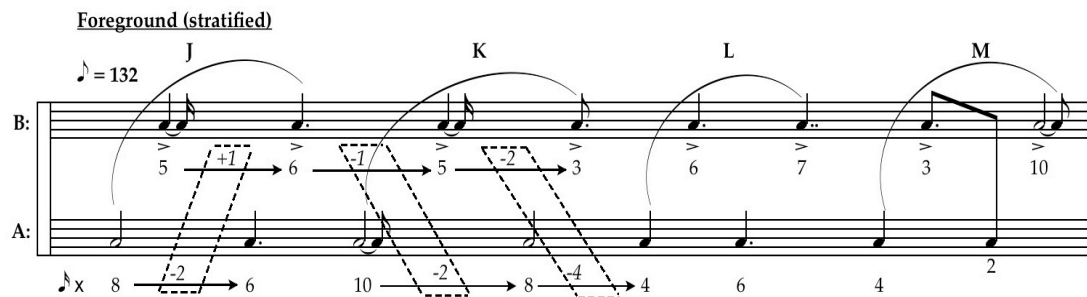


Example 2.11: *Octandre*, II, mm. 49-64, foreground

By re-imagining the accented and unaccented durations – *B* and *A* respectively, from example 2.9 – as voices in a two-part rhythmic counterpoint, the arithmetic process begins to reveal itself. I borrow this concept from Edward Cone, whose terms “stratification, interlock, and

synthesis” describe musical connections between non-linear blocks of material in the music of Stravinsky.⁴⁸ In the passage from *Octandre*, this is quite simple: two elements oscillate, with most parameters unchanged on each reappearance.

Example 2.12 stratifies *A* and *B* durations on separate staves. I also include here select differences in numerical durations within each stratum. In the first four durations (labeled *J*), for instance, the *A* durations decrease in value by 2 sixteenth-note units, the *B* durations by 1. In the next four durations (labeled *K*), both *A* and *B* durations decrease, *A* at twice the rate of *B*. The proportional rates of change between strata thus maintain (in a non-linear way) a sense of logic amidst dramatic adjacent changes in duration length.



Example 2.12: *Octandre*, II, mm. 49-64, foreground, stratified

While groups *L* and *M* do not support this proportional rate-of-change structure, each group is framed by a shift in direction of duration change. The *B* stratum shifts from an increase to a decrease between *J* and *K*, from a decrease to an increase between *K* and *L*, and vice-versa between *L* and *M*.

⁴⁸ Edward T. Cone, “Stravinsky: The Progress of a Method,” *Perspectives on Schoenberg and Stravinsky* (Princeton, N.J.: Princeton University Press, 1968), 157.

This passage provides a clear specimen of arithmetic rhythmic process, partly emphasized by a predominance of unchanging parameters – rhythm is one of the changing few. Grouping structure is, as I discussed above, more concealed in a surface so consistent. In this case, I sought groups in an abstracted level of duration structure and, more to the point, in its rates of change.

Geometric Foreground Activity

Examining geometric process requires both a shift in analytical focus, and a retention of those principles devised to examine arithmetic rhythm. Grouping and duration structure influence arithmetic and geometric activity with equal force. In addition to duration length, however, pulse and tempo demand greater attention in geometric processes, and must be clarified to expose the essence of the rhythmic activity in question.

Example 2.13 presents a foreground analysis of the movement subtitled “Apogée” from Lutosławski’s *Musique funèbre*.⁴⁹ The most salient feature of this example is the temporal motion of pulse – represented here predominantly in eighth-note units. Where the score expresses these pulse alterations in ratios (3:2, 6:4, etc.), my analysis expresses them in integers, calculated as the product of the ratio and the score’s tempo indication, quarter note = MM 88. The ratios 6:4 and 3:2 thus result in the tempo MM 132, essentially modulating the tempo for the duration of the polyrhythm. I also

⁴⁹ Witold Lutosławski, *Musique funèbre: for string orchestra* (London: Chester/Hansen, 1974), 38-41.

Example 2.13: *Musique funèbre*, mm. 234-245, foreground

Foreground

♩ = 44

66 88 132 88

♩ = 88

234 *fff*

132 176 88

237

66 44

240

etc.

243

utilize half- and double-tempo modulations in order to reflect appropriate temporal flow.

Examining rhythmic motion without tuplets – that is, replaced with tempo alterations above the staff – highlights any embedded grouping, divorced from an alignment with the beats and measures to which tuplets apply. Tempo alterations also bear significance. Expressed as metronome marks, these integers demonstrate temporal motion with clarity analogous to indications such as *rallentando*, *accelerando*, *ritenuto*, *allargando*, and so on.

“Apogée” constructs its formal discourse from a pair of accelerating phrases followed by a decelerating one. In terms of grouping structure, the accelerations are more straightforward than the deceleration – with so few parameters in flux. Example 2.14 demonstrates the temporal flow of the first phrase. Notably, the first analytic tempo indication is at half tempo, to reinforce the accelerating pulse. The following triplet is reinterpreted as MM 66, before the analytic tempo becomes consonant with that of the score – MM 88. The final gear shift results in a reinterpreted sextuplet – MM 132 – and arrives in tempo at m. 236.

Example 2.14: *Musique funèbre*, mm. 234-236, foreground

Particularly noteworthy here is the long group length between the downbeats of m. 235 and 236, where no parameter changes in any way except pulse. This renders the group an entirely subdivisive rhythmic mechanism – one that changes the rate of pulsation but not the grouping of impulses. The same can be said of the next phrase, articulating a parallel operation with a faster series of tempi.

Beginning at m. 240, however, grouping structure assumes a more interactive role. (I use voice leading as the most influential criterion for grouping in this phrase, establishing groups and accentuation by harmonic change, and the contour of individual lines.) Example 2.15 illustrates the groups in this phrase: 2, 3 or 4 units of eighth, quarter or half notes.

The image displays a musical score for Example 2.15, which is the foreground of measures 240-245 from 'Musique funèbre'. The score is written for a piano and features a complex rhythmic structure. The top staff is a single melodic line with a tempo marking of 66. The bottom staff is a piano accompaniment with a tempo marking of 44. The score is divided into two systems. The first system covers measures 240 to 243, and the second system covers measures 244 to 245. The notation includes various rhythmic values, including eighth and quarter notes, and is characterized by frequent harmonic changes and voice leading. Brackets and other markings indicate specific groupings and accents within the music.

Example 2.15: *Musique funèbre*, mm. 240-245, foreground.

While group lengths occasionally slip into periodicity, they offset themselves around temporal shifts. The change from groups of 4 to groups of 3 (just before m. 241) anticipates the shift in pulse from eighth notes to triplets – MM 88 becomes MM 66. This renders the sensation of triplet motion more ephemeral, with groups subverting – or syncopating – the orientation of beats. Similar anticipations of pulse change occur between triplets and quarter notes (in m. 242), and between quarter and half notes (in m. 243).

Further emphasizing the impact of this phrase as a deceleration is the rate at which the pulse unit lengthens. The 75 and 66 percent alterations (around triplets) occur farther apart, and shift by less than the 50 percent alterations (from eighth, to quarter, to half notes). In general, this final deceleration – and the rhythm of the whole movement, for that matter – serves to amplify the effect of dramatic tessitura change.

A: $\text{♪} = 96$
 $\text{A: } \overbrace{\text{♪}}^3 \times 16 = \text{♩} = 72$

B: $\text{♪} = 96$
 $\text{B: } \text{♪} \times 17 = \overbrace{\text{♩}}^{(\text{♪} = 96)}$

C: $\text{♪} = 96$
 $\text{C: } \overbrace{\text{♪}}^5 \times 23 = \overbrace{\text{♩}}^{\text{♪} = 120}$

Example 2.16: 90+, opening cross-pulse

In *90+*, Carter deploys a comparable approach to pulse and tempo.⁵⁰ In this case, however, rhythmic fluctuations occur both horizontally and contrapuntally. The opening, for instance, is marked by a three-layer cross-pulse (presented in example 2.16), superimposing duration lengths of 16 triplet eighth-note units (labeled *A*), 17 sixteenth-note units (*B*), and 23 quintuplet sixteenth-note units (*C*), with staggered initial entries. These three layers adopt distinct characters, distinguishable primarily by articulation – *A* maintains a *tenuto-marcato* triplet eighth note, *B* is always sustained, *C* *staccato*.

Foreground

The musical score for Example 2.17 consists of two systems of music. The first system, labeled 'Foreground', shows measures 19-23. It begins with a tempo marking of 120. The notation includes a series of notes with durations of 10, 8, 7, 6, 5, 4, 3, and 2 etc. The second system shows measures 24-28, with a tempo marking of 120. The notation includes a series of notes with durations of 75, 90, 120, and 150. The score features a complex rhythmic structure with various note values and rests, including triplet eighth notes, sixteenth notes, and quintuplet sixteenth notes.

Example 2.17: *90+*, mm. 19-23, sustained chord layer

Each layer breaks the pattern in turn. First, *C* diminishes its fixed durations at m. 4, accumulating rhythmic density. Next, *B* accelerates with the

⁵⁰ Elliott Carter, *90+: for piano* (New York: Hendon Music, 1994).

tempo modulation at m. 15 – to periodic duration-lengths of 14 sixteenth-note units – and escapes regularity at m. 19 with an acceleration. Example 2.17 presents this acceleration, beginning with arithmetic diminutions, then becoming geometric in m. 22 – shifting down a gear in order to accelerate the pulse toward a gestural zenith on the fourth beat of m. 23. As in the Lutosławski example, tuplets are reimagined as metronome marks here. At a tempo of MM 120, 5:4 effects the indications MM 75 and MM 150, 3:2 effects MM 90 and MM 180.

A is the last layer to escape periodicity in m. 113. This is partly due to the work's compositional design – Carter organizes rhythm in this piece around ninety equally spaced impulses, maintaining temporal proportions amidst tempo modulations.⁵¹ This layer's departure from regularity – like that of B – is arithmetic in nature, but takes as its pulse unit the triplet eighth note (as presented in example 2.18).

Foreground

♩ = → 180

etc.

♩s: 12 8 6 5 4 3 2 1.5 0.5

(♩ = 120) [114]

Example 2.18: 90+, mm. 113-118, foreground

⁵¹ Schiff, *The Music of Elliott Carter*, 218. Carter composed this work as a ninetieth-birthday gift for Goffredo Petrassi, hence the numerical significance.

As rhythmic profiles, each layer absorbs the pulse in turn, by way of tempo modulation. The quintuplet tempo modulations to MM 120 at m. 15 and m. 90, and the triplet one to MM 72 at m. 37, linearize the structural significance of each rhythmic ratio in a formal capacity. The initial cross-pulse thus becomes the means by which each new temporal environment ensues.

Perhaps more pertinent to a foreground-level discussion of this piece is Carter's brand of rhythmic counterpoint. Example 2.19 presents a two-voice rhythmic counterpoint distributed consistently between right- and left-hand staves. These voices distinguish themselves most clearly through articulation – an entirely *legato* right hand, the left *staccato* or *marcato*. Groupings are influenced primarily by contour. The tempo indication in the score at this moment in the piece is MM 72. Consequently, 3:2 is represented as MM 108 and MM 54, 5:4 as MM 90. Notice also the rests above the staff, indicating the duration between an attack-point and a pulse modulation.

The left-hand part in this passage exhibits elements of regularity, evident in the chains of unaltered eighth (m. 69), quarter (mm. 70-71) and dotted eighth notes (m. 73). The background pulse – layer A from example 2.16 – occurs in the same place in each measure at this point in the piece, as the tempo (MM 72) reflects a triplet-level relationship with the piece's original metronome mark (MM 96).

Much of this regularity in the left-hand part operates in contradistinction to the right-hand's undulating temporal motion. Right and left hands share no attack-points, and only very occasionally operate with the same pulse-unit subdivisions. The geometric tempo fluctuations in the right hand articulate a sort of structural counterpoint between pitch and rhythm: melodic waves and temporal waves change direction – or modulate pulse –

Example 2.19: 90+, mm. 68-77, foreground

Foreground

$\text{♩} \rightarrow 72$ 90 72 54 90 108 90 72
 R.H. 
 L.H. $\text{♩} \rightarrow 108$ 72 
 (♩ = 72) Pulse: 
 (♩ = 72) [69] (legato sempre) 

90 72 108 72 108 72
 3 4 5 6 8


 [72] 

108 72 108 72 90 108
 108 72 108
 [75] 



independently of one another. (My analysis presents this through the placement of tempo modulations relative to groups.)

At m. 72, the right hand begins to decelerate significantly, by way of an amalgamation of geometric and arithmetic operations. The pulse continues to permute adjacent combinations of MM 72, MM 90 and MM 108, while durations augment themselves in sixteenth-note unit quantities. Example 2.20 restates my analysis for mm. 72-74. Each right-hand duration increases by one sixteenth note, while the pulse continues to fluctuate. Neither right nor left hand, however, articulate temporal shifts in m. 73. The effect of this is less regular than the analysis may suggest – context renders these durations as no more than continuations of a deceleration already in motion. This is due, in part, to phenomena surrounding proportional transformations of longer durations – suggesting in less ephemeral rhythms a geometric-arithmetic equivalence.⁵²

Example 2.20: 90+, mm. 72-74, foreground

⁵² I discuss this concept in more detail in chapter 3, pp. 62-66.

The counterpoint between voices in this passage exhibits a generally continuous composite rhythmic sensation, achieved through a phasing of temporal energies. Namely, when the right hand articulates some kind of deceleration, the left hand increases – or at least maintains – its frequency of activity, and vice versa. Example 2.21 restates my analysis of mm. 75-77. These measures feature an acceleration in the right hand, superimposed against decreasing left-hand rhythmic activity, maintaining a sense of momentum despite unequal pulsations.

Example 2.21: 90+, mm. 75-77, foreground

Summary

The above passages supply this study with instances of specific phenomena, and with opportunities for clarifying my analytical methods. The Stravinsky and Varèse examples deal with the identification of durations, groups, and their capacity for internal and external transformation. The Stravinsky example introduces a group-based hierarchy, where sub- and super-divisions

of group and duration lengths establish rhythmic identity – rather than metric and hypermetric divisions. The Varèse example provides a more elusive grouping structure, masked by an overwhelming consistency of many musical parameters.

The Lutosławski example introduces my use of temporal equivalency to delineate durations and groups amidst polyrhythms, and, paired with the Carter example, exposes types of geometric temporal flow with a certain clarity. The Carter also demands of analysts a capacity to deal with a reasonably intricate rhythmic counterpoint. Illuminating and reducing rhythmic superimposition become increasingly important in this study – distinguishing individual layers and depicting their interaction.

CHAPTER 3

THE MIDDLEGROUND

The current chapter applies those methods and principles used for analyzing rhythmic activity introduced in the previous chapter, but now to macrorhythmic activity. While many analytical principles transfer easily between foreground and middleground levels, certain techniques demand greater flexibility. To this end, I argue below for an exploration of the “grey area” between arithmetic and geometric distinctions at middle- and background levels. Illustrating my methods are two excerpts (including the one in chapter 2) from *Le Sacre du printemps*. Firstly, however, I should clarify my position on some often-disputed aspects of long-range rhythmic connections.

Limitations of Macrorhythm

Applying rhythmic analysis to longer durations necessitates, in addition to descriptions of a notated temporal discourse, descriptions of a notated rhythm’s aural effect. This suggests that the perception of an excerpt’s macrorhythmic structure informs the resulting analysis. (Of course, perception also informs foreground analyses. Grouping attack points that occur farther apart, however, requires attention to subtlety that only very fast or slow tempi would engender.)

Proximity, in particular, renders itself more subtly in macrorhythmic structures. Hasty discusses at some length potential limitations for

macrorhythmic duration lengths – “hypermeter,” in his case.⁵³ Kramer also raises questions of proximity and “non-linearity” for longer durations,⁵⁴ although he also notes problems with music cognition’s capacity to accurately transmit such long-range durations.⁵⁵ Rothstein, whose work deals almost exclusively with middleground rhythmic activity, says of music cognition that “such experiments can do little but reveal some lowest common denominator of musical perception. Subtleties such as we are dealing with here must be left to the connoisseur.”⁵⁶

Perhaps Rothstein refers here to a need for music cognition to yield its conclusions not only from easily cultivated results, but also from those more difficult to cultivate, or even from a complete lack of conclusive data. My analyses seek to inform the perception of both score and sound, for which any scientific model would require a myriad of variables. Omitting the listener from such an experiment demands a level of objectivity of the analyst – to argue and rationalize every decision in the pursuit of cause and effect. My decisions, however, cannot completely avoid subjectivity, and use the perception of the score as a factor in analytical preference.

In order to deal with long-range durational relationships, it is useful to consider proportion as a defining analytical factor.⁵⁷ Stockhausen illustrates this emphasis on proportion using the example of two fairly disparate pairs of durations (or “phases”):

⁵³ Hasty, *Meter as Rhythm*, 180-181.

⁵⁴ Kramer, *The Time of Music*, 325-327.

⁵⁵ *Ibid.*, 350.

⁵⁶ Rothstein, *Phrase Rhythm in Tonal Music*, 100.

⁵⁷ Kramer, *The Time of Music*, 42.

... if a first phase lasts 1", and a second phase 2", there is a difference of 1". Two phases of 11" and 12" duration have the same difference of 1". But we perceive the difference between 1" and 2" as relatively large, whereas the same difference between 11" and 12" is hardly perceptible. This means that we do not perceive differences, but rather proportions: 1:2 is the larger proportion, as compared with 11:12.⁵⁸

Stockhausen's observations are particularly salient to this study.

Adjacent 11- and 12-second durations indeed have the effect of being much more similar than they are different, and thus the second duration sounds only marginally longer than the first – if at all. A 1:2 proportion is certainly more clearly demarcated, with the second duration twice the length of the first.

I design my approach to middleground (and background) rhythm around the relative proportions of gestures and sections. I deal with measurable and – to a reasonable degree – perceivable duration lengths, as no musical example analyzed is longer than 36 measures.⁵⁹

"Les Augures printaniers: danses des adolescentes"

In the previous chapter I examined one instance of rhythmic insistence in Stravinsky's *Le Sacre du printemps*. (I return to this at a middleground level in examples 3.3, 3.4, 3.6 and 3.7.) The excerpt in question here is somewhat more straightforward in macrorhythmic construction,⁶⁰ and thus it can serve to

⁵⁸ Stockhausen, "How Time Passes," 11. Stockhausen's scheme of proportions is designed to link duration and pitch, not unlike Cowell, *New Musical Resources*, 99.

⁵⁹ Indistinguishably long (or short) durations arise in certain compositions, but exceed the scope of this study. I discuss specific instances of such phenomena in the concluding chapter.

⁶⁰ Stravinsky, *Le Sacre du printemps*, 12-15.

Example 3.1: *Le Sacre du printemps*, figs. 13-18, middleground

$\text{♪} = 50$

Example 3.1, continued

The musical score for Example 3.1, continued, is presented in two systems. The first system, starting at measure 17, features a treble staff with a melodic line and a bass staff with a complex rhythmic pattern. The second system, starting at measure 18, continues the rhythmic texture and includes the instruction "come sopra etc." followed by a vertical ellipsis.

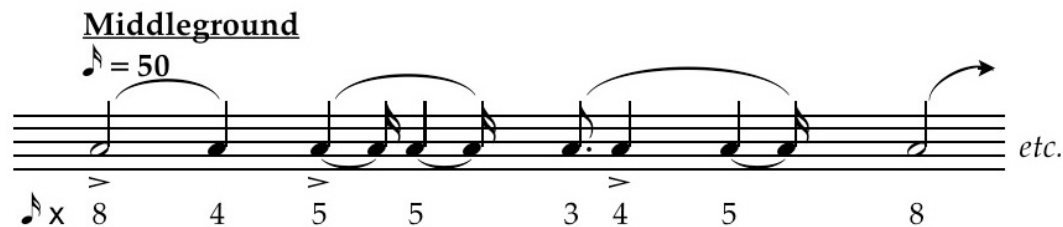
introduce my approach to middleground levels without a rhythmic fabric too complex to probe.

The analytical staff in example 3.1 represents each half note (in the score) as a sixteenth note (at 12.5 percent of the original tempo), resulting in example 3.2's sixteenth-note = MM 50. In this excerpt, the half note operates as the pulse unit of middleground rhythm. (The foreground rhythm is clearly driven by the eighth note.) Groupings and middleground durations distinguish themselves in this passage through texture, orchestration, density and articulation. Harmony is comparatively static, contributing to this passage's insistent sensation.

Perhaps I should clarify my selection of the fourth duration's attack point (in the second measure after figure 15). One could argue that the

downbeat at figure 15 is more significant, with increasing instrumentation and dynamics. I favor the second measure of figure 15 because the harmonic stability of the melody (beginning on B-flat) holds a degree of structural weight, and sounding more like a beginning than an ending. I interpret this moment much like the one at figure 18 – an accented deviation preceding an emphasized arrival.

Example 3.2 restates my middleground analysis without the orchestral reduction. The first two durations manifest a sense of macrorhythmic regularity, both sub- and superdivisible in groups of 2, 4 and 8 units.⁶¹ They assume a referential role in this passage, cultivating clear macrodurations (expressed as half and quarter notes in my analysis), which undergo subsequent arithmetic alterations.



Example 3.2: *Le Sacre du printemps*, figs. 13-18, middleground isolated

⁶¹ There exist two conflicting readings of this passage in Cooper and Meyer, *The Rhythmic Structure of Music*, 98-99; and Yeston, *The Stratification of Musical Rhythm*, 130-131. The former attempts to impose metric groupings of individual impulses around accented pulsations by way of listener tendency. The latter implies meter through the measures preceding figure 13. My analysis supports a metric reading, but for reasons of superdivision (reasonably square macrorhythmic durations) rather than exclusively articulating metric patterns from context – whether compositional or listener-imposed.

The next two durations, each comprising five units, illustrate a parallel augmentation – lengthening durations by a single unit and repeating the new length. The following three durations (in the third group) illustrate a linear augmentation, with each duration one unit longer than the previous one.

This example seems somewhat conventional in comparison to the foreground analyses in chapter 2: macrorhythmic units are consonant with barlines; arithmetic alterations correspond directly to rhythmically square macrodurations of 2, 4 and 8 units. Is it possible, then, that middle- and background analyses require such simple rhythmic divisions as units to accurately represent arithmetic operations? Do arithmetic middle- and background analyses always need to be inherently metric?

In the next analysis, I repeat a foreground arithmetic excerpt from chapter 2 with the addition of middleground-level durations. This excerpt then becomes a laboratory for interpreting macrorhythmic activity.

“Danse sacrée”

The image displays a musical score for 'Danse sacrée' from *Le Sacre du printemps*, specifically figures 142-148. The score is divided into two main parts: 'Middleground' and 'Foreground'. The 'Middleground' part is written on a single staff with a tempo marking of ♩ = 126. It features three distinct rhythmic patterns: a first pattern with a duration of 12 (marked 'x 12'), a second pattern with a duration of 12, and a third pattern with a duration of 11. The 'Foreground' part is written on a grand staff (treble and bass clefs) with a tempo marking of ♩ = 126. It features a complex rhythmic pattern with durations of 2, 4, 3, 3, 3, 3, 3, 3, 3, 3, and 3. The foreground pattern is marked with 'x 2' and includes a bracketed section labeled '143' and another bracketed section labeled '144'. The foreground pattern is also marked with 'x 126'.

Example 3.3: *Le Sacre du printemps*, figs. 142-148, middle- and foreground

Example 3.3, continued

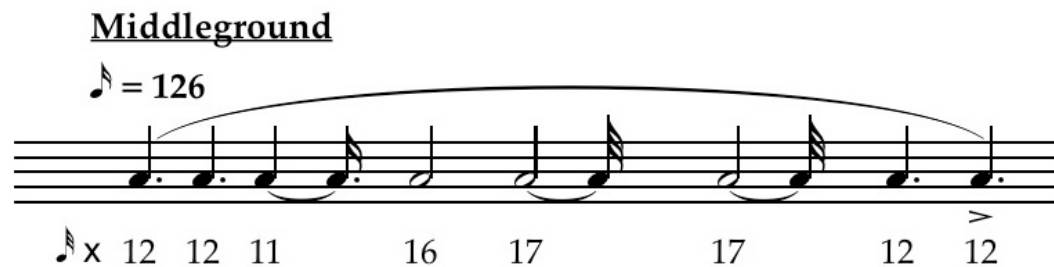
The image displays three systems of musical notation. Each system consists of a vocal line (top staff) and a piano accompaniment (bottom staff). The vocal line features a melodic line with various ornaments and fingerings indicated by numbers (e.g., 3, 2, 4, 3, 3, 2, 3, 2, 4). The piano accompaniment is written in a complex, rhythmic style with many beamed notes and rests. Above the vocal line, there are small staves showing specific notes or ornaments, with numbers 16 and 17 indicating measure numbers. The piano accompaniment includes measure numbers 145, 146, and 147. The third system ends with an 'etc.' marking. The notation is in a key with two flats (B-flat and E-flat) and a 6/8 time signature.

By superimposing middle- and foreground analyses, structural correspondences are easily accessible.⁶² Attack points align themselves

⁶² The middleground analysis here is a purely arithmetic reading – I present an alternative below.

vertically with the first attack point in each foreground group,⁶³ and middleground durations represent the lengths of each foreground group, at half tempo.

Example 3.4 isolates the middleground analysis of this excerpt. As an arithmetic macrorhythm, every pulse unit is taken into account. This is undoubtedly an accurate representation, and numerical distinctions appear clearly discriminated. If Stockhausen is correct, however, in his assumption that proportions comprising similarly long durations are difficult to differentiate aurally, then this middleground analysis does not accurately represent the excerpt's effect.

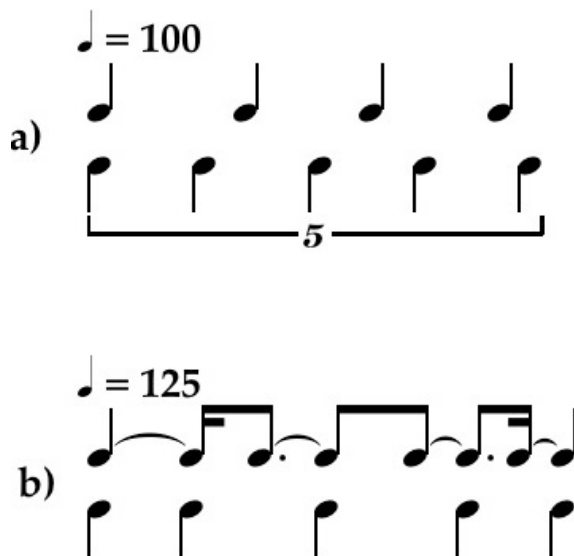


Example 3.4: *Le Sacre du printemps*, figs. 142-148, middleground only

Take, for instance, the second and third durations – as notated here, 12 and 11 thirty-second notes respectively. Is there a perceivable difference in proportion – especially at a middleground level, with a single macroduration representing multiple foreground durations? How could an analysis effectively represent the effect of this kind of macrorhythm without compromising the accuracy of its data?

⁶³ As discussed in a foreground capacity (p. 31), the attack point in the measure after fig. 145 retains emphasis as a group beginning due to its parallel harmonic connection to other groups in this passage, and to an interpretation of the previous figure as a departure rather than an arrival.

Consider for a moment another rhythm, presented in example 3.5. Both 3.5*a* and *b* articulate a 5:4 polyrhythm, with 4 equal durations in the upper voice, and 5 in the lower voice. Further, the tempo indications render these two notations sonically equivalent, as quarter-note values in 3.5*b* maintain the quintuplet quarter-note pulse from *a* (125 is the product of 5:4 and 100).⁶⁴ Example 3.5*a* is thus a geometric notation, and *b* an arithmetic notation, of the same rhythmic result.



Example 3.5: Arithmetic-geometric equivalence

There exist both theoretical and compositional bases for such an equivalence. In example 2.17 (in chapter 2), Carter articulates an acceleration using both arithmetic and geometric means. Larger duration values diminish by sixteenth-note unit quantities, creating, for example, 8:7, 7:6, 6:5 adjacent proportions. When, in m. 22, durations become single units, the pulse

⁶⁴ Yeston, *The Stratification of Musical Rhythm*, 121-130, explains this phenomenon – “abstract inclusion relationships” – in some detail.

modulates geometrically at ratios of 5:4 and 3:2. Here, longer durations – and closer proportions – provide greater access to a technique that engages this kind of arithmetic-geometric equivalence.

Foreground

The musical score for Example 3.6, measures 19-23, is presented in a single system. The foreground melody is on a single staff, with durations of 10, 8, 7, 6, 5, 4, 3, and 2 etc. The background accompaniment is on two staves, with durations of 75, 90, 120, and 150. The score includes measure numbers 19, 22, and 23.

Example 3.6: 90+, mm. 19-23, sustained layer (example 2.17 restated)

In the Stravinsky middleground example, this arithmetic-geometric equivalence can clarify a sense of macrorhythmic effect. Example 3.7 presents two possible analyses of the passage in example 3.3. Example 3.7*a* restates my earlier arithmetic analysis. For comparison, 3.7*b* utilizes arithmetic-geometric equivalence, and is notated at one quarter the tempo of *a*.⁶⁵ In 3.7*b*, the

⁶⁵ I do this for two reasons. The first is to represent middle- and background durations with similar or smaller pulse values to those in the foreground (where possible). This is useful for presenting macrorhythmic sub- and super-divisions. The second is a visual one: for the ability to beam these durations together as a group.

duration labeled Z appears, within the staff, identical to durations X and Y – despite its length of one unit fewer in 3.7a. The tempo, however, modulates slightly to MM 137.45 – the product of 12:11 and MM 126, the original tempo. I am thus dealing with duration Z as a geometric alteration, expressing its ratio – 12:11 – as an integer – MM 137.45. I interpret durations R and S similarly. These 17-unit durations become 16-unit ones through a slight downward tempo modulation to MM 118.59 – the product of 16:17 and MM 126.

Middleground

a) $\text{♩} = 126$

Duration	X	Y	Z	Q	R	S	T	U
Value	12	12	11	16	17	17	12	12

b) $\text{♩} = \rightarrow 126$

Duration	X	Y	Z	Q	R	S	T	U
Value	3	3	3	4	4	4	3	3

Example 3.7: *Le Sacre du printemps*, figs. 142-148, middleground possibilities

Qualifying Middleground Methods

Comparing the two interpretations in example 3.7, I prefer *b*. It represents the activity in this excerpt as macrorhythm, rather than a series of numerically shifting duration lengths. The distinction between 3.7a and *b* is not just cosmetic (although *b* certainly looks more recognizable as a rhythm), nor is *b*

simply a quantization of *a*.⁶⁶ Notated tempo modulations – no matter how subtle – represent augmentations and diminutions accurately, without disrupting rhythmic flow within the staff.

In my foreground analysis of the Stravinsky excerpt, I hypothesized certain macrorhythmic properties that example 3.7*b* has subsequently revealed.⁶⁷ Namely, that the first three groups formed three subtly changing, almost identical macrodurations, followed by a similar, yet longer, group of three impulses. Example 3.7*b* supports this observation. Durations X, Y and Z are indeed almost identical – dotted sixteenth notes – with Z slightly faster. Durations Q, R and S are longer durations – eighth notes – with R and S slightly slower than Q.

Such a representation also addresses Stockhausen's observations about proportion. Clearly perceivable proportions appear duly notated in example 3.7*b*, and those less discernible appear amended to the degree to which durations are altered. My preference for this method indicates (to some degree) my pursuit of "embryonic rhythm."⁶⁸

My approach to middleground-level analysis and, in particular, to arithmetic-geometric equivalence, also permeates background-level analysis (and, at times, even foreground levels). The next chapter deals with fore-, middle- and background analyses for a complete piece.

⁶⁶ Durations are not simply "rounded-up" or "rounded-down" to fit a predefined rhythmic grid, ignoring subtle alterations of duration-lengths.

⁶⁷ See pages 31-33.

⁶⁸ Boulez, *Stocktakings from an Apprenticeship*, 52.

CHAPTER 4

BRIAN FERNEYHOUGH'S *ADAGISSIMO*

Composer Brian Ferneyhough's rhythmic language exhibits such accumulations of complexity as to provide its interpreter with formidable challenges. Even the most experienced performers compel themselves with intense focus – sometimes alongside agitated emotional states – in order to articulate, as closely as possible, rhythmic polyphonies and embedded polytemporalities from densely notated scores.⁶⁹ Analytical interpretations are faced with similar challenges. Readings must (at least) attempt to reconcile duration lengths, intricate geometric pulse modulations (or filters),⁷⁰ and densely layered counterpoint – both within and among instrumental parts.⁷¹

Adagissimo is rendered with comparative clarity in Ferneyhough's catalogue. He notates the work entirely with an eighth-note pulse. Its formal layout is conceivably linear (as I will detail below in discussions of middleground-level reduction). Its brevity allows comprehensive and reasonably in-depth discussions of fore-, middle- and background levels. As a case study, the following analysis tests the limits of these methods to decipher dense rhythmic activity (whose previous analyses focused on musical fabrics more transparent). The background level attempts a temporal representation

⁶⁹ Steven Schick. "Developing an Interpretive Context: Learning Brian Ferneyhough's Bone Alphabet," *Perspectives of New Music* 32, no. 1 (Winter, 1994): 132-153.

⁷⁰ Pulse modulations (or strata thereof) layered over rhythmic activity.

⁷¹ My analysis, although influenced by tutelage with Ferneyhough (August-September 2009), is drawn primarily from examining the score. I have gathered extra knowledge of his methods from: Brian Ferneyhough, James Boros, Richard Toop, and Jonathan Harvey. *Collected Writings*. Contemporary music studies, v. 10 (Amsterdam: Harwood Academic Publishers, 1995); and Toop, "Brian Ferneyhough's Lemma-Icon-Epigram."

of the work's formal evolution, and, at each level, analyses seek to inform and clarify the general rhythmic effect of the figures in question.

It is unclear whether or not such an extraction of rhythmic identity (from its notation) would aid a performer in learning these rhythms. Applying reductive methods to languages like Ferneyhough's could potentially yield a byproduct: the analytical process simulates (to some degree) a performer's interpretative mechanism.⁷²

The following analysis consists of foreground and sub-foreground levels, two middleground levels, and one background. They follow an almost exponential rate of abstraction: the sub-foreground represents every duration from the score, middle- and background levels represent longer phrases and sections as single durations. In foreground and sub-foreground examples, analyses appear directly above the appropriate passages from the score.⁷³ Middle- and background levels appear without such context, except example 4.14, which combines back- and middleground with foreground analyses.

Foreground

The sub-foreground displays an analysis more representative than reductive. Its purpose is, in some regards, data collection: maintaining four separate instrumental polyphonic layers, accounting for all durations in the score. I include this level (so proximal to the surface of the work) in the interest of

⁷² It is possibly true that any analytical method aims to make sense of notation. Ferneyhough's work, nonetheless, tends to push performers toward the limits of accuracy, amplifying the tension between notation and aural result for performer and analyst alike.

⁷³ Brian Ferneyhough. *Adagissimo: string quartet* (London: Edition Peters, 1984.) Used by permission of C.F. Peters Corporation.

Example 4.1: *Adagissimo*, sub-foreground
Used by permission of C.F. Peters Corporation

2

V'cello

'Cello:

The image displays a page from a musical score for Luciano Berio's 'L'Espresso'. The score is written for piano, flute, and cello. It is divided into three main sections of measures: 44-77, 66-99, and 55-68.75. The notation includes various musical symbols such as notes, rests, and dynamic markings like 'pp', 'mf', 'f', and 'sf'. The score is written in a complex, multi-staff format, with each instrument having its own staff. The piano part is written in a 12-tone style, with many notes beamed together. The flute part is written in a more traditional style, with many notes beamed together. The cello part is written in a more traditional style, with many notes beamed together. The score is written in a complex, multi-staff format, with each instrument having its own staff. The piano part is written in a 12-tone style, with many notes beamed together. The flute part is written in a more traditional style, with many notes beamed together. The cello part is written in a more traditional style, with many notes beamed together. The score is written in a complex, multi-staff format, with each instrument having its own staff. The piano part is written in a 12-tone style, with many notes beamed together. The flute part is written in a more traditional style, with many notes beamed together. The cello part is written in a more traditional style, with many notes beamed together.

This page contains measures 10 through 14 of the musical score for "The Great Wall" by John Williams. The score is written for three staves: two melodic staves at the top and a piano accompaniment staff at the bottom. Measures 10-12 are part of a larger section starting at measure 10, which includes various dynamics like *p*, *pp*, *mf*, and *f*. Measure 13 begins a new section with a tempo change to "allegretto". The score includes many performance markings such as "gliss.", "stacc.", "pesante", "quasi flaut.", and "più tranquillo". There are also some numerical values above the notes, possibly indicating fingerings or specific performance instructions. The key signature has one sharp (F#), and the time signature is 4/4.

Example 4.1, continued

The musical score is divided into several systems. The first system (measures 15-17) features a piano part with complex rhythmic patterns and a violin part with sustained notes and slurs. Dynamics include *pp*, *f*, *mp*, and *mf*. The second system (measure 19) continues the piano part with intricate textures and the violin part with melodic lines. Dynamics range from *pp* to *sf*. The third system (measure 18) shows the piano part with a *cresc.* marking and the violin part with a *dim.* marking. The score includes various performance instructions such as *gliss.*, *sub.*, *subito legato*, *detaché*, *al. rall.*, *pp cresc.*, *sempre*, *(mf)*, *quasi f*, *p*, *pp*, *mf*, *sf*, *in mp*, *poco*, *cantabile*, *ten.*, *animato*, *secco*, *molto marc.*, and *f*.

Example 4.1, continued

The image displays a musical score for Example 4.1, continued, consisting of two systems of four staves each. The first system includes numerical annotations above the staves: 44, 55, 68.75, 55, 73.3', 110, 91.6', 73.3', 99, 66, 55, 82.5, and 55. The second system is marked with a box containing the number 20 and features a variety of performance instructions and dynamics. These include 'flaut.' with a dashed line, 'gliss.', 'pp', 'mf', 'p', 'p_{sfz}', 'poss.', 'loco', 'f', 'fpp', 'mf', 'ff', 'sffz', 'al niente', 'marc.', 'mp', 'p', 'pp', 'più calmo', and 'mp'. The score also includes various musical notations such as slurs, ties, and dynamic markings like 'al niente' and 'più calmo'. The right margin of the second system is labeled 'Freiburg, Nov. 1983'.

identifying certain rhythmic figures as frames of reference for processes at higher levels, and to acknowledge the autonomy of each contrapuntal layer.

The surface of *Adagissimo* exposes numerous manifestations of diversity. Polarized duration lengths appear juxtaposed and superimposed,

illustrated in example 4.2*a* and *b* respectively. The work's first event (*a*) lasts a quarter note and comprises two durations of 1 and 7 sixty-fourth-note units – conceivably the most unequal subdivision of a quarter note at this tempo. Example 4.2*b* (mm. 6-7) details a texture with two slow-moving voices (violin II and viola) and fluctuating faster motion (between cello and violin I). The last violin I group in this example, for instance, exhibits a certain spontaneity: duration lengths operating at the sixty-fourth-note level, against dotted quarter notes in violin II and cello, the latter as part of a septuplet. (The viola also sustains longer durations, operating at a faster pulse rate – quintuplet and embedded quintuplet eighth-note units.)

Example 4.2 consists of two parts, a) and b). Part a) shows a single staff with a quarter note divided into two durations of 1 and 7 sixty-fourth-note units. Part b) shows three staves (violin II, viola, and cello/violin I) with various durations and groupings.

Part a) shows a single staff with a quarter note divided into two durations of 1 and 7 sixty-fourth-note units. The notation includes a box labeled '1' and a box labeled '7' above the staff. The staff is labeled 'a)' and has a treble clef. The notation includes a quarter note with a dot, and a group of seven sixteenth notes.

Part b) shows three staves (violin II, viola, and cello/violin I) with various durations and groupings. The notation includes boxes labeled '6' and '7' above the staves. The staves are labeled 'b)' and have treble clefs. The notation includes various note values, including dotted quarter notes, eighth notes, and sixteenth notes. There are also numerical values like 44, 55, 68.75, 73.3', 91.6', 99, 44, and 51.3' indicating durations or groupings.

Example 4.2: Applications of diversity in *Adagissimo*, sub-foreground

Example 4.2, continued

c)

d)

This kind of durational polarity also applies to linear chains of durations. Example 4.2c presents the violin I analysis, mm. 4-5. Although operating mostly with septuplet thirty-second note pulse units, this passage effects a rhythmic angularity caused by constant shifts between eighth-, sixteenth- and thirty-second-note durations, and by emphasizing shorter durations through dynamics, contour and articulation. In stark contrast, the violin II durations in mm. 5-8 (example 4.2d) appear equal and unaltered. Such instances of regularity supply Ferneyhough's rhythmic language with a rich realm of possibility – exploring continuity alongside discontinuity.

The foreground will focus on grouping structure and geometric tempo alterations. It details, in particular (although also occasionally clear in the sub-foreground), Ferneyhough's manipulation and differentiation of parallel and non-parallel rhythmic figures. Table 2 details all notated tempo alterations from my analyses of all structural levels, how they are calculated, and where they first appear (from foreground-background, mm. 1-20). It is a useful reference for the sub-foreground, but an essential one for examining higher levels.

Table 2: Analytical Tempo Indications in *Adagissimo*

Indication	Ratio (at MM44)	First Appearance
29.3'	4:3, 1:2	Foreground, m. 13
33	3:2, 1:2	Foreground, m. 13
35.2	4:5	Foreground, m. 16
36.7	64:77	Middleground 2, m. 8
36.6'	5:6	Sub-foreground, m. 11
37.71	6:7	Foreground, m. 5
38.5	7:8	Foreground, m. 12
38.82	15:17	Middleground 1, m. 10
39.1'	8:9	Foreground, m. 6
40.62	12:13	Middleground 1, m. 17
41.25	3:4, 5:4	Foreground, m. 3
45.83'	5:6, 5:4	Sub-foreground, m. 11
46.32	16:19, 5:4	Middleground 1, m. 6
46.42	48:91, 2:1	Middleground 2, m. 6
47.73	64:59	Background, m. 1
48.13	7:8, 5:4	Sub-foreground, m. 13
50.29	8:7	Foreground, m. 3
51.3'	7:6	Sub-foreground, m. 3
52.8	4:5, 3:2	Foreground, m. 5
55	5:4	Sub-foreground, m. 1
55.22	32:51, 2:1	Middleground 2, m. 3
56.67	6:7, 2:3	Foreground, m. 17
57.29	5:3, 5:4, 5:4, 1:2	Foreground, m. 15
60	12:11, 5:4	Middleground 1, m. 19
61.1'	5:3, 5:6	Sub-foreground, m. 14

Table 2, continued

61.88	5:4, 9:8	Sub-foreground, m. 14
62.86	8:7, 5:4	Foreground, m. 3
64.16'	7:8, 5:3	Foreground, m. 19
66	3:2	Sub-foreground, m. 2
68.75	5:4, 5:4	Sub-foreground, m. 3
73.3'	5:3	Sub-foreground, m. 6
74.25	3:4, 3:2, 3:2	Foreground, m. 2
77	7:4	Sub-foreground, m. 3
79.2	4:5, 9:8	Foreground, m. 5
81.48	8:9, 5:3, 5:4	Foreground, m. 19
82.5	3:2, 5:4	Sub-foreground, m. 2
83.81	8:7, 5:3	Foreground, m. 17
84.86	6:7, 3:2, 3:2	Foreground, m. 2
85.5'	7:6, 5:3	Foreground, m. 20
85.94	5:4, 5:4, 5:4	Foreground, m. 9
88	2:1	Middleground 1, m. 5
91.6'	5:3, 5:4	Sub-foreground, m. 7
96.25	7:6, 3:2, 5:4	Foreground, m. 8
92.81	3:2, 5:4, 9:8	Sub-foreground, m. 10
99	3:2, 3:2	Sub-foreground, m. 1
110	5:3, 3:2	Sub-foreground, m. 17
114.58	5:3, 5:4, 5:4	Sub-foreground, m. 17
115.5	3:2, 7:4	Sub-foreground, m. 4
117.3'	16:9, 3:2	Foreground, m. 18
137.5	5:3, 3:2, 5:4	Sub-foreground, m. 19

Example 4.3: *Adagissimo*, foreground
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Foreground

2

♩ = → 44 55 $\frac{7}{\cdot}$ 99 84.86 99 $\frac{7}{\cdot}$ 66 $\frac{7}{\cdot}$ 55

Violin I: 

Violin II: $\frac{7}{\cdot}$ 82.5 $\frac{7}{\cdot}$ 74.25 99 $\frac{7}{\cdot}$ 82.5 55 

Violin 1 

Violin 2 


Viola 


V'cello 

3 50.29 44 $\frac{7}{\cdot}$ 62.86 55 $\frac{7}{\cdot}$ 41.25 $\frac{7}{\cdot}$ 68.75 $\frac{7}{\cdot}$ 55 4 77

$\frac{7}{\cdot}$ 51.3' 44

(melody) ♩ = → 77 44 66 $\frac{7}{\cdot}$ 82.5

Viola 

V'cello: 

3 







Example 4.3, continued

The musical score for Example 4.3, continued, spans measures 5 through 9. It features vocal lines and piano accompaniment with various musical notations, dynamics, and performance instructions.

Measures 5-7: The vocal lines are marked with measure numbers 66, 52.8, 66, 50.29, 41.41, 62.86, and 55. The piano accompaniment includes dynamics such as *pp*, *f*, *mf*, *ff*, and *ppp*, along with performance instructions like *gliss*, *gliss tanto*, *poco*, and *marc. in p*.

Measures 8-9: The vocal lines are marked with measure numbers 66, 55, 66, 55, 85.94, 68.75, 55, 66, 44, 82.5, 96.25, 115.5, 66, 44, 51.3', 82.5, 44, 55, 66, 55, 44, and 51.3'. The piano accompaniment includes dynamics such as *pp*, *mf*, *ff*, *ppp*, *mp*, *f*, *quasi f*, and *poco*, along with performance instructions like *gliss*, *gliss tanto*, *poco marc.*, *in p*, *piu agitato*, *perendosi*, *marc. in mf*, *legato*, and *poco*.

The musical score for 'The Rose Tree' in G major is presented on three staves. The first staff contains measures 44, 55, and 44, with a box labeled '10' above measure 44 and a box labeled '11' above measure 55. The second staff contains measures 115.5, 82.5, 66, 44, 73.3', 45.83', 66, and a measure with a fermata. The third staff contains measures 66, 55, 66, and 44, with a box labeled '12' above measure 44. The score includes various musical notations such as notes, rests, and dynamic markings like '>' and '>'. The tempo is marked 'Allegretto' and the time signature is 3/4.

13 38.5 77 48.13 33 99 44 55 77

55 44 29.3' 66 51.3'

66 44 29.3' 61.1' 72.2'

Example 4.3, continued

15 55 7. 68.75 55 82.5 55 44 66 44 56.67

68.75 57.29 45.83' 35.2 44 36.6 110 114.58 91.6' 73.3' 83.81

44 66 44 73.3' 66 44

15 7

pp *f* *mp* *sub. subito legato* *gliss.* *detaché* *al. tall.* *mp* *p* *poco* *f* *mp* *sfz* *sub.* *mf* *dim.* *mf* *pp* *cresc.* *pp* *cresc.* *sempre* *(mf)*

18 66 44 66 77 55

117.3' 66 77 66 44 55 110 137.5 110 64.16' 91.6' 81.48 91.6'

55 68.75 44 99

18

mf *sfpp* *delib.* *p* *mp* *p* *mf* *p* *poco* *pp* *cantabile* *ten.* *poco* *cresc.* *mp* *sf* *pp* *f* *mf* *mp* *p* *sf* *in mp* *poco* *p*

quasi f *p* *pp* *mf* *p* *sf* *in mp* *poco* *p*

Example 4.3, continued

The image displays two musical excerpts. The top excerpt consists of three staves with rhythmic annotations. The first staff has a measure labeled '44' followed by a measure with '55' and a tempo marking of '68.75'. The second staff has measures labeled '85.75', '110', '91.6'', '73.3'', '78.57', and '73.3''. The third staff has measures labeled '55', '82.5', '66', '99', and '66'. The bottom excerpt is a full orchestral score for 'Freiburg, Nov 1983'. It includes staves for Flaut., Violin, Viola, and Cello/Double Bass. The score is marked with various dynamics (pp, mf, p, f, ff, sffz, mp, ppp, fpp, mfz, p, marc., al niente) and includes tempo markings like 'più calmo'. It also features complex rhythmic notations such as '5:3', '5:4', '3:2', and '5:4'.

Polyrhythms (and embedded polyrhythms) from the score are included as integers in Table 2. MM 55, for instance, is the product of a 5:4 tuplet and MM 44 – the score’s indicated tempo. MM 91.6’ is the product of 5:3, 5:4 and MM 44, first appearing in the viola part at m. 7. Those indications in italics refer to analyst-imposed tempo alterations, which (like those applied to the Stravinsky middleground example in example 3.7*b*) subtly alter certain duration-lengths comprising irregular quantities of pulses in order to clarify essential rhythmic proportions.⁷⁴ A considerable number of these duration

⁷⁴ See pp. 62-66.

lengths permeate the foreground of this work. It is for this reason that so many analyst-imposed tempo alterations in Table 2 occur in foreground examples.

The foreground delineates the first reductive level of analysis of *Adagissimo*. The viola and cello lines are condensed as a single layer, reflecting an essential component of the work's contrapuntal construction: a lower-voice heterophonic melody, anchoring the texture. I seek to represent each integral melodic pitch – those that appear emphasized and distinct from decorative or elaborative pitches. Example 4.4*a* restates the analysis of this layer from where it enters at m. 3. Both instruments enter on the same pitch (A), but the next analytical duration favors the viola C over the cello triplet, whose pitches behave like neighbor notes to the initial A. The analysis of the following measure favors longer durations and attack points articulated more heavily. Example 4.4*b* introduces another reductive tool from the same layer. In the group that crosses the barline (mm. 8-9), the cello quarter-note G-sharp is favored over the viola sixteenth note because it occurs first and is sustained while the viola enters (despite the similarity in dynamics).

The violin parts in the foreground, although not notated as a composite layer, reduce certain groups of notes into single durations. Unaccented and repeated notes that occur in close proximity to emphasized ones are often incorporated into a single duration in analyses. Example 4.4*c* restates the first measure, where *piano* and *pianissimo* rearticulations are absorbed into the preceding analytical duration. I should point out that the last thirty-second-note harmonic in m. 1 acts as an anticipation to the violin II downbeat of m. 2 – the same pitch and color, more strongly emphasized in this context.

Example 4.4: *Adagissimo*, reductive aspects, foreground

Analyst-imposed tempo alterations (in italics in Table 2) play important roles in rhythmic presentation at the foreground level. These indications are, in their own way, reductive tools – useful in describing rhythmic activity and effect without excess clutter. The viola and cello layer at m. 6 appears significantly simpler in the foreground than in the sub-foreground. (Example 4.5 illustrates this comparison.) I apply here a ratio of 4:5 to the first 5 sixty-fourth notes under the nonuplet in the score, rendering that portion of the duration as a sixteenth-note's value, omitting the extra sixty-fourth note, and resulting (together with the other portion of the duration) in a dotted eighth note.

6

Foreground

7 79.2 99 44

Sub-foreground

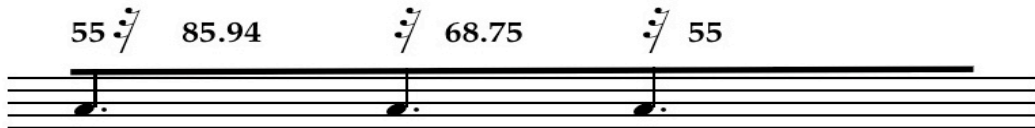
7 99

Example 4.5: *Adagissimo*, m. 6, comparison of sub-foreground and foreground

In addition to visual clarity, imposing such tempo fluctuations to rhythmic analyses can expose aspects of the method of the complexity in question. Example 4.6 restates the foreground analysis of the first violin line in m. 9. Each duration in the score comprises an eighth note tied to a thirty-second note. In this case, I apply 5:4 to each eighth-note portion, resulting in dotted eighth notes. This is, of course, in the service of visual coherence. It

also, however, mimics a process in the score: whereby a 5:4 ratio is applied in retrograde to each preceding duration, as illustrated in example 4.6*b*. This step-by-step removal of embedded quintuplets reinforces Ferneyhough's application of polyphony – not only to the musical fabric, but also to the process of polyrhythmic filtration.

[9]

a) 

b) 55 85.94 ← 5:4 ← 68.75 ← 5:4 ← 55

Example 4.6: *Adagissimo*, m. 9, foreground, analyst-imposed alterations

The passage in example 4.6 reflects a certain type of parallel structure: where adjacent durations comprise unchanging quantities of pulse units, but where the pulse unfolds at differing rates. Symmetrical structures like those from the foreground analysis of the first violin part in mm. 1-2 and mm. 16-17 (example 4.7*a* and *b* respectively) are slightly more complex, but nonetheless analogous. The former's (*a*) axis of durational symmetry lies between the third and fourth durations, unfolding more quickly toward the end of the group. The latter's (*b*) axis of symmetry lies between its second and third durations, with oscillating tempi. (Ferneyhough augments the final duration by a thirty-second note, hence the analyst-imposed indication.)

The image displays four musical examples, labeled a) through d), each on a five-line staff. A vertical dashed line labeled 'axis' is positioned in the center of each staff.

- a)** Features a long horizontal line spanning the staff. Above it, numerical values are placed: 44 (with a boxed '1' above it), 55, 99 (with a boxed '2' above it), 84.86, 99, and 66. A slur connects the first 44 to the 99, and another slur connects the 99 to the 66. A small 'z' symbol is above the 99 and 66. A greater-than sign (>) is below the staff near the 66.
- b)** Features a horizontal line with a slur above it. Numerical values are 44, 66, 44, and 56.67. A boxed '17' is above the 66. A 'z' symbol is above the first 44. A greater-than sign (>) is below the staff near the 44.
- c)** Features a horizontal line with a slur above it. Numerical values are 79.2, 99, 44, and 51.3'. A boxed '6' is above the 79.2, and a boxed '7' is above the 51.3'. A 'z' symbol is above the 79.2 and 51.3'. Brackets are below the staff under the 79.2, 44, and 51.3'.
- d)** Features a horizontal line with a slur above it. Numerical values are 110, 91.6', 73.3', 78.57, and 73.3'. A boxed '20' is above the 110. A 'z' symbol is above the 78.57. A greater-than sign (>) is below the staff near the 73.3'.

Example 4.7: *Adagissimo*, foreground, parallel and non-parallel structures

Example 4.7c (viola and cello, mm. 6-7) exhibits aspects of both parallel and non-parallel structure. These three pairs of durations relate to each other at different levels of subdivision – operating at the sixteenth-, thirty-second-, and eighth-note levels respectively. Within each pair, proportional relationships appear very similar. The second violin rhythm in the final measure (example 4.7d), in comparison, exhibits a non-parallel structure: pulse

rates shift and durations augment, then finally cadence with a surprisingly short note – the work’s point and indicator of cessation.

The types of figures in example 4.7 all pursue a sense of rhythmic identity. Although heavily filtered (or subverted) by geometric tempo fluctuations, they apply both additive and subdivisive procedures – by adding and subtracting pulses between adjacent durations, or by shifting between pulse-unit levels (quarter, eighth, sixteenth notes, for instance).

Grouping structure behaves like rhythm in *Adagissimo*, with a diversity of group lengths, ebbs and flows. The viola and cello layer evolves more continuously than that of the violins, and, as the middleground discussion below will address, its analysis relies on reductions of rhythm and melody alike. The violins’ layer is, in general, more impetuous. Both violins tend to articulate shorter phrases, juxtaposing and superimposing diverse group lengths more frequently.⁷⁵ In example 4.8, the first violin line follows two similar group-lengths with one almost half the length. While this happens, the second violin articulates a single grouping over the course of more than three measures.

Example 4.8: *Adagissimo*, foreground, mm. 5-7, grouping structure

⁷⁵ I select groupings for the violins in much the same way as in other pieces, paying particular attention to proximity – in both temporal and pitch space. It is also important, however, to acknowledge those sudden changes of gesture that occur so often in this piece.

Middleground

Reducing a three- or four-part polyphony to a monophonic rhythmic middleground relies on an interpretation of the texture. In *Adagissimo*, I would describe the texture as a slow-moving heterophonic melody in the lower voices, occurring amidst intricate elaborations – both within the melodic layer and above it (in the violins). The violin material maintains importance in the texture, but over the course of the piece, it articulates less a single continuous narrative than a babel of exuberant fragments, *con sordini* throughout.

Middleground 1

The image displays a musical score for 'Middleground 1' across two staves. The first staff contains measures 1 through 12, and the second staff contains measures 13 through 20. Each measure is labeled with a number in a box above it. Below the notes, numerical durations are provided for various attack points. For example, measure 1 has a duration of 44, measure 2 has 66, and measure 3 has 44. Measure 4 has 51.3', measure 5 has 44, measure 6 has 50.29, measure 7 has 88, measure 8 has 110, measure 9 has 46.32, measure 10 has 55, measure 11 has 66, and measure 12 has 44. Measure 13 has 33, measure 14 has 66, measure 15 has 77, measure 16 has 66, measure 17 has 44, measure 18 has 73.3', measure 19 has 40.62, measure 20 has 66, and measure 21 has 44. Measure 22 has 60, measure 23 has 48.13, and measure 24 has 55. The notation includes various musical symbols such as notes, rests, and beams, indicating a complex rhythmic structure.

Example 4.9: *Adagissimo*, middleground 1

The durations in middleground 1 thus orient themselves around the melodic evolution. Attack points are drawn from both melody and elaborations, where appropriate. The attack point in m. 6 favors the melody, marked for emphasis at the beginning of a linear phrase. The attack point on the second beat of the next measure favors the first violin elaboration, an incision in the texture. Special emphasis applies to attack points shared

between layers, like the one at the downbeat of m. 3. As a reduction of foreground 2, middleground 1 selects attack points from both group beginnings and from accents within groups.⁷⁶

Much like the fractional tempo indications in the middleground examples in chapter 2, those in the current middleground example are halved – each eighth note is represented as a sixteenth note. The resulting rhythmic figures appear, at a glance, congruent with those in the foreground: additive and subdivisive relationships of pulse quantities, constant tempo modulation – often in counterpoint with attack points. Some manifestations of parallelism occur (as illustrated in example 4.10): mm. 3-5 feature a five-duration symmetrical figure (despite a significant acceleration in tempo), and, in mm. 8-12, two pairs of durations, deployed symmetrically.

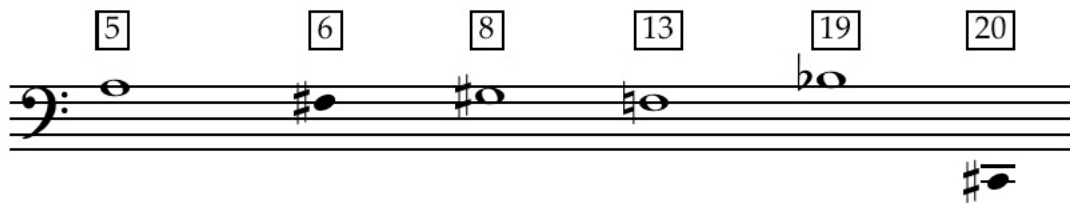
a)

b)

Example 4.10: *Adagissimo*, parallelism in middleground 1

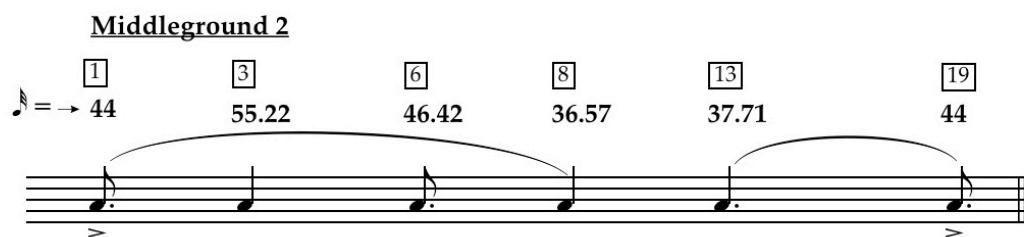
⁷⁶ See example 4.14 for condensed levels, pp. 97-107.

Example 4.11 presents a melodic reduction of the viola and cello layer. Open note-heads indicate primary emphasis – pitches shared by both instruments, and given dynamic or durational priority. Closed note-heads indicate secondary emphasis – pitches given priority (durational or registral) but not shared by both instruments. This reduction proves useful for determining those groupings in middleground 1 and 2 that reflect *Adagissimo's* long-range evolution.



Example 4.11: *Adagissimo*, viola and cello melodic reduction

In middleground 2, tempi are quartered – representing each eighth note as a thirty-second note. Each duration results from reducing groups from middleground 1 (at the attack point of each beginning duration). The two groupings here represent a simple formal phenomenon: an increase in tension – articulated in both the melody and in the increasing density of elaborations – followed by a conclusion. Notable here is the rhythmic figure articulated by the first four durations. In sixteenth-note unit quantities, they comprise 3+4+3+4, with fluctuating tempi. Another permutation of the same quantity and types of durations occurs in middleground 1 (mm. 8-12), suggesting embryonic rhythms embedded across structural levels.

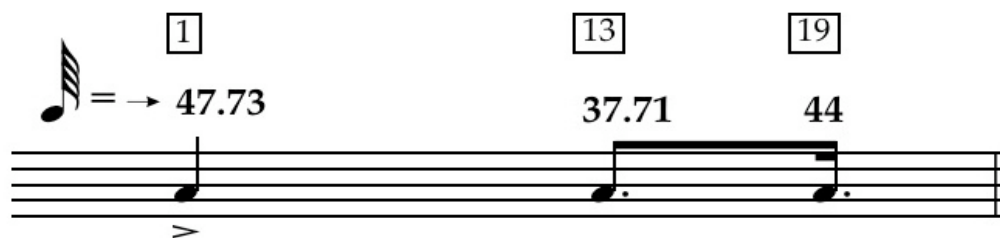


Example 4.12: *Adagissimo*, middleground 2

Background


The background analysis represents formal moments (groupings in middleground 2) as durations. The three durations – opening, intensification and conclusion, essentially – summarize elements of *Adagissimo*'s rhythmic character. Namely, employing an additive relationship followed by a subdivisive one – durations of 8+6+3 thirty-second-note units – reflects rhythmic activity that permeates other structural levels. Such an illustration of formal proportions typifies an extensive application of this study's principles, but in my opinion, worthwhile in its intention to reconcile a piece's rhythmic surface and formal pacing.


Background

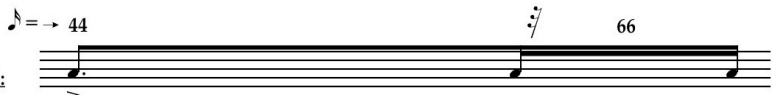


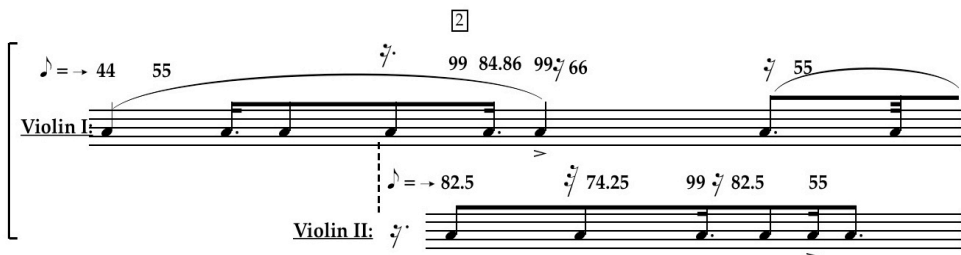
Example 4.13: *Adagissimo*, background


Example 4.14: *Adagissimo*, combined levels
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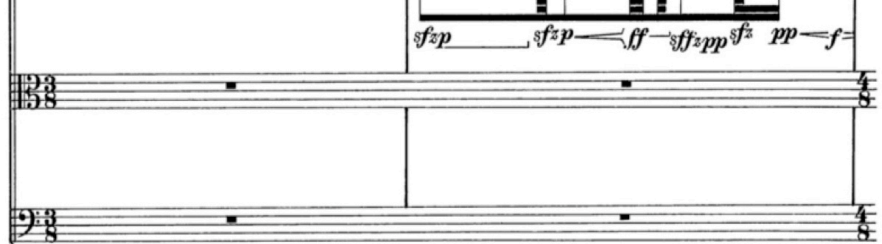
Background: 

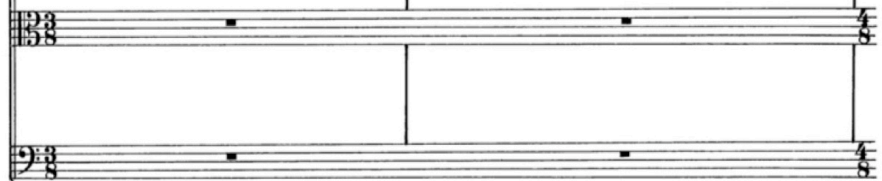
Middleground 2: 

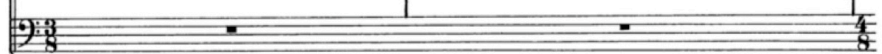
Middleground 1: 

Foreground: 

Violin 1 

Violin 2 

Viola 

V'cello 

Example 4.14, continued

55.22

44 51.3' 44

3 50.29 44 62.86 55 41.25 68.75 55 77 4

51.3' 44

melody) 77 44 66 82.5

Viola / Cello:

[illegible]

Example 4.14, continued

The musical score for Example 4.14, continued, consists of two systems. The first system features a vocal line with notes at 50.29, 88, 46.42, 110, 46.32, 55, and 66. It includes a melodic line with notes at 66, 52.8, 66, 50.29, 41.41, 62.86, and 55. The second system shows a piano accompaniment with complex textures, including glissandos, trills, and various dynamic markings such as *pp*, *mf*, *ff*, *ppp*, *p*, *mp*, *sub*, *sub. p*, *sfz*, *ffz*, *fff*, *mfz*, *mp*, *pp*, *ppp*, *poco*, *marc. in p*, and *gliss. lento*. The piano part includes intricate rhythmic patterns, trills, and glissandos, with some notes marked with *sub* or *sub. p*. The score is written in a complex, multi-staff format, with the piano part occupying the lower staves and the vocal part at the top.

Example 4.14, continued

The image displays a musical score for Example 4.14, continued, consisting of three systems of staves. The first system shows a single staff with a melodic line, featuring a slur over measures 36.57 and 44. The second system consists of three staves, with measures 66, 55, and 66 marked above the first staff, and measures 55, 85.94, 68.75, and 55 marked above the second staff. The third system also consists of three staves, with measures 66, 82.5, 96.25, 115.5, and 44 marked above the first staff, and measures 82.5, 44, 55, 66, 55, 44, and 51.3 marked above the second staff. The bottom system is a complex orchestral score with multiple staves, including woodwinds (flaut., clarinet), strings, and percussion. It includes various musical notations such as slurs, ties, and dynamic markings (e.g., *sf*, *pp*, *mf*, *ff*, *p*, *mp*, *f*, *ppp*, *quasi f*, *mp*, *pp*, *poco*). Performance instructions like *gliss.*, *sub.*, *loco*, *marc.*, *in mf*, *perdendosi*, *più agitato*, *agitato*, *legato*, and *poco marc.* are also present. The score is written in a key signature of one sharp (F#) and a 4/4 time signature.

The musical score for 'The Rose Tree' is presented on four staves. The first staff contains a single note with a fermata and a duration of 29.3'. The second staff begins with a boxed measure number 10 and contains several measures with durations: 44, 55, 44, 38.5, 55, 85.94, 45.83', 55, and 68.75. The third staff continues with durations: 115.5, 82.5, 66, 44, 73.3', 45.83', 66, and a final measure with a fermata. The fourth staff concludes with durations: 66, 55, 66, and 44. The score uses various musical notations including notes, rests, beams, and fermatas to represent the melody.

This is a page from a musical score, likely for a piano. It features four staves of music. The top staff has a treble clef and contains various notes, rests, and dynamic markings such as *sfz*, *p*, *pp*, *f*, *mf*, and *mp*. There are also performance instructions like "al ball.", "marc.", "alla punta", and "legato poss.". The second staff continues the melodic line with similar dynamics. The third staff appears to be a lower register or accompaniment part, with dynamics like *pp*, *p*, *mf*, and *mp*. The bottom staff is labeled "affettuoso" and contains slower-moving passages with dynamics like *p*, *pp*, *meno*, *mf*, and *poco*. The score includes many slurs, ties, and detailed fingering or articulation marks throughout.

Example 4.14, continued

The image displays three systems of musical notation. The first system consists of two staves, each with a single note marked with the number 37.71. The second system is a three-staff arrangement. The top staff contains notes with markings 33, 66, and 77, connected by a long slur. The middle staff begins with a boxed number 13, followed by notes and markings including 38.5, 77, 48.13, 33, 99, 44, 55, and 77. The bottom staff starts with a note marked 55, followed by 44, 29.3', 66, 51.3', and another note marked 55. The third system is a complex piano score for three staves. It includes various musical notations such as slurs, ties, and dynamic markings like *fp*, *pp*, *mf*, *sfz*, *ppp*, *f*, *mp*, and *sfz in mp*. Performance instructions like *sub. trem.*, *gliss.*, *stacc.*, *ten.*, *pesante*, *più tranquillo*, *quasi flaut.*, *non troppo*, and *poco* are present. Measure numbers 13, 32, 3, 8, and 7 are indicated at the beginning of the system.

Example 4.14, continued

Musical score for Example 4.14, continued, showing four staves. The notation includes various musical symbols such as notes, rests, and dynamic markings. Numerical values are placed above the notes, indicating specific measurements or durations. The staves are numbered 66, 44, 73.3', and 40.62. The second staff is numbered 15, 55, 68.75, 55, 82.5, 55, 44, 66, 44, and 56.67. The third staff is numbered 68.75, 57.29, 45.83', 35.2, 44, 36.6, 110, 114.58, 91.6', 73.3', and 83.81. The fourth staff is numbered 44, 66, 44, 73.3', 66, and 44.

Musical score for Example 4.14, continued, showing a complex arrangement of musical notation. The notation includes various musical symbols such as notes, rests, and dynamic markings. The score is numbered 15, 16, and 17. The notation includes various musical symbols such as notes, rests, and dynamic markings. The score is numbered 15, 16, and 17. The notation includes various musical symbols such as notes, rests, and dynamic markings. The score is numbered 15, 16, and 17.

Example 4.14, continued

The image displays a musical score for Example 4.14, continued. It consists of two main systems of staves. The top system features a vocal line and a piano accompaniment. The vocal line includes measures 44, 60, and 48.13, with a fermata over measure 44. The piano accompaniment includes measures 66, 44, 60, and 48.13, with a fermata over measure 44. The bottom system includes measures 18, 66, 77, 55, 110, 137.5, 110, 64.16', 91.6', 81.48, and 91.6'. The piano accompaniment includes measures 55, 68.75, 44, and 99. The score is written in a complex, multi-measure format, with various musical notations such as notes, rests, and dynamic markings. The dynamics include *mf*, *sfpp*, *delib.*, *p*, *mp*, *p*, *pp*, *poco*, *cantabile*, *p*, *ten.*, *poco*, *cresc.*, *mp*, *animato*, *sf*, *in mp*, *poco*, and *p*. The score is also marked with *quasi*, *f*, *pp*, *mf*, *p*, *sf*, *in mp*, and *poco*. The tempo markings include *loco*, *secco*, *molto marc.*, and *animato*. The score is written in a complex, multi-measure format, with various musical notations such as notes, rests, and dynamic markings.

Example 4.14, continued

55

20

44 55 68.75 55

85.75 110 91.6' 73.3' 78.57 73.3'

55 82.5 66 99 66

20

flaut. gliss.

pp *mf* *psfz* *p* *ff* *sffz* *al niente*

8 *loco* *5:3* *marc.* *gliss.* *mp* *p* *pp*

p *fpp* *mf* *3:2* *al niente*

p *ppp* *f* *mfzp* *5:4* *al niente*

più calmo *mp* *al niente*

Freiburg, Nov. 1983

Summary

Adagissimo proves a fruitful case study for this method of analysis. Its dense polyphony of rhythmic lines, figures, and polytemporal filters entails a solid step-by-step process to isolate rhythmic effect. Its diversity of rhythmic activity provides a quantity of analytical material. Each level of abstraction implies moments of consistency across levels, and exposes a generally unified rhythmic approach. These analyses (especially the foreground) in their visual reorientation of duration and proportion, examine properties of Ferneyhough's approach to rhythmic flow – a hyperactive synthesis of diverse arithmetic and geometric transformations.

CHAPTER 5

SOME CONCLUSIONS AND PROSPECTIVE APPLICATIONS

Conclusions

The examples discussed in the preceding chapters presented rhythmic analyses driven equally by proportion and duration. Determining the effect (and making sense) of notated rhythms in a given work demanded scrutiny of precise durations, their execution and interaction. I chose examples that evinced a temporal approach more transformative than regular. Proportional elements in macrorhythms were made (at least implicitly) perceptible by expressing clear durational values with subtle annotations for tempo modulations – whether score- or analyst-imposed.

At a foreground level, the Stravinsky and Varèse examples isolated and explored rhythmic activity deploying asymmetrical, pulse-based structures. Both passages proved useful for isolating temporal elements (with few other parameters in flux) and fruitful for mapping rhythmic development. The Lutosławski and Carter examples likewise exposed rhythmic structure, and demonstrated my approach to pulse manipulation and polytemporality (namely, the stratification of tempo modulations and durations).

Middle- and background levels considered proportion and duration through a set of case studies. The Stravinsky examples established the difficulty in reconciling irregular quantities of pulse units with middleground rhythm, then proposed a solution: an arithmetic-geometric equivalence, enacted by analyst-imposed tempo change. In both the Stravinsky and

Ferneyhough works, I sought to expose embryonic rhythms, stripping away (without dismissing) details that endow the surface with density. The Ferneyhough, in particular, necessitated focused interpretations of the texture. The work's web of polyphony challenged (and rewarded) pursuits of multifaceted proportional structures.

The use of musical notation in analyses implied that this approach would benefit practical musicians. Composers and performers of new music seeking methods for interpreting or creating non-metrical rhythmic activity would find such a source in this study. In particular, clarifying rhythmic and macrorhythmic flow (by isolating and superimposing geometric and arithmetic properties) supports the articulation of temporal proportion, whether long- or short-range.

For Further Investigation

In the interest of succinctness, this study has addressed only a few possible rhythmic phenomena. These cover a reasonable area of technical possibility, but are by no means comprehensive. I suggest here some potential complementary practical applications.

The excerpts already examined last no longer than 2 minutes. This limitation prevents the method from investigating durations long enough to challenge perceptible proportional structure. Certain works by composers such as Morton Feldman or Steve Reich (*Piano Phase*, for instance) would invite an analytical response to questions of audible structure in long-range extremes.

Modes of notation that enable a range of possible performer responses also warrant investigation. An additional Lutosławski score (such as *Jeux vénitiens*) that engages aleatoric techniques would require analyses to address multiple (and sometimes diverse) possibilities from a single set of instructions. In contrast, works for mechanical or electronic instruments (Nancarrow's *Studies for Player Piano* or Stockhausen's *Gesang der Jünglinge*, for instance) necessitate in analyses an acknowledgement of musical rhythm in the absence of a performer-score interface.

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A PORTFOLIO OF THREE WORKS

A Dissertation

Presented to the Faculty of the Graduate School

of Cornell University

In Partial Fulfillment of the Requirements for the Degree of

Doctor of Musical Arts

by

Christopher Thomas Gendall

August 2010

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A PORTFOLIO OF THREE WORKS

Christopher Thomas Gendall, D.M.A.

Cornell University 2010

The three works in this portfolio exhibit variations on similar modes of musical expression. Although all three apply a certain sense of exuberance, their respective idioms demand subtle differences in technical approach.

The mixed chamber octet *Wax Lyrical* engages an aggressive musical surface, designed to extrapolate its types of melodic decorations and elaborations. Ornaments become melodic lines, faster rhythms decelerate, harmonies increasingly include microtonal pitches (reflecting the significance of the pitch space between half-steps), often in counterpoint with the reverse of each process. *Flotsam* shapes its discourse around flippant, sometimes violent gestures, articulating distinct coloristic and textural profiles in each of its three movements.

Epithets unfolds alongside its text, and the revelation of the author's intention. Words and phrases appear deliberately masked or fragmented in passages more informative or fantastical, only to be exposed in declamations toward the end, in settings of a paragraph much more condescending in tone.

BIOGRAPHICAL SKETCH

Christopher Gendall is the New Zealand School of Music Jack C. Richards Composer-in-Residence for 2010-11. His works have received performances in Europe, Japan, the United States and South America by such performers as the New Zealand Trio, Marcel Worms, the New Juilliard Ensemble, Brave New Works, Dinosaur Annex and the New Zealand Symphony Orchestra. He was recently awarded the 2008 SOUNZ Contemporary award (the premier annual New Zealand award for a new composition) for his work *Wax Lyrical* as well as an ASCAP Morton Gould Young Composer award in 2006 and the inaugural New Zealand Symphony Orchestra Todd Young Composer Award in 2005. Gendall holds Bachelors and Masters of Music degrees from Victoria University of Wellington. He has been involved in a number of festivals and conferences, including the 2009 Britten-Pears Contemporary Composition course, the Wellesley Composers' Conference, and the Royaumont *Voix Nouvelles* course. Select works are published by the Waiteata Music Press and Peer Music Hamburg, and recorded on Atoll Records.

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WAX LYRICAL

Chris Gendall
(2008)

Mellon Commission, 2008

For Brave New Works

WAX LYRICAL

Chris Gendall

INSTRUMENTATION:

Flute

Clarinet in Bb

Harp

Piano

2 Violins

Viola

Cello

Transposed Score

PERFORMANCE NOTES:

Flatten one quarter-tone – \flat

Sharpen one quarter-tone – \sharp

Alternative fingerings for Flute and Clarinet are suggestions only, and can be substituted for others with the same result.

Chris Gendall
(2008)

© Copyright Chris Gendall, 2008

10

Fl. *ppp* *ff* *f* *pp* *ff* *pp*

Cl. *ppp* *ff* *pp* niente *f* *pp*

Hp. *B₃, F₂* *Φ E₃* *ff*

Pno. *mp* *ff*

Vln. I *pp* *ff* *pp* ord. *ff* *sffz* *f* *pp* *f* *pp* *ff*

Vln. II *pp* *ff* *p* *ff* *pp* *f* *pp* *ord.*

Vla. *ppp* *ff* *ord.* *f* *pp* *ff*

Vc. *pp* *ff* *pp* *ff* *ppp* *ff* *ppp* *ff* *pp* *ff*

A breath, no tone

flz.

8^{va}

17

Fl. *ffp* *ppp* *ff* *pp*

Cl. *ffp* *ppp* *ff* *pp*

Hp. *Φ A₃, D₃* *p* *mf*

Pno. *mp* *f* *mp* *f*

Vln. I *ff* *pp* *ff* *pp* *f* *pp* *ppp* *ff* *arco* *sul pont.* *pp*

Vln. II *ff* *pp* *ff* *pp* *pp* *ff* *ord.* *pp*

Vla. *ff* *pp* *ff* *pp* *ff* *pp* *pp* *ff* *pp*

Vc. *pp* *ff* *pp* *pp* *f* *ppp* *ff* *pp*

pizz. *arco* *pizz.* *arco* *sul pont.* *ord.* *pizz.* *arco*

8^{va}

37

B

Fl. *ff* *pp* *ff* *ppp*

Cl. *ff* *pp* *ff* *ppp*

Hp. *ff* *pp* *ff* *ppp*

Pno. *ff* *pp* *ff* *ppp*

Vln. I *ff* *pp* *ff* *pp* *niente*

Vln. II *pp* *ff* *pp* *ff* *pp* *niente*

Vla. *ff* *pp* *ff* *pp* *niente* *pizz. ord. 3* *mf*

Vc. *ff* *pp* *ff* *pp* *niente* *pizz. 3* *mf*

una corda



44

Fl. *fz.* *fp* *niente* *f* *mp* *breath, no tone*

Cl. *f* *pp* *mf* *pp* *niente* *mf* *p*

Hp. *p* *mf*

Pno. *pp* *p* *mf* *pp sub.* *mf* *p*

Vln. I *(pont.)* *gliss.* *mf* *ppp* *pizz. ord. 3* *pp* *mf* *pp* *arco* *8va.*

Vln. II *ord. IV* *p* *mp* *pp* *pizz.* *mf* *p* *arco* *8va.*

Vla. *p* *arco* *gliss.* *niente* *pp* *niente* *pp* *mf* *p*

Vc. *p* *mf* *pp* *mf* *p*

50

Fl. *mp* *f* *p* *f* *pp*

Cl. *f* *pp* *f* *pp* *p* *f*

Hp. *D₇* *mp*

Pno. *f* *p* *f* *f*

(8)..... *loco*

Vln. I *pp* *ff* *pp* *f* *pp* *niente* *pizz.* *mp*

Vln. II *f* *pp* *sub* *f* *pp* *niente* *pizz.* *mp*

Vla. *arco II* *pp* *ff* *pp* *f* *pp* *niente* *pizz.* *f*

Vc. *ff* *pp* *f* *pp* *niente* *f*

55

Fl. *pp* *f* *pp* *f* *pp*

Cl. *pp* *f* *pp* *niente* *p* *f*

Hp. *A₇, E₉* *mp* *f*

Pno. *ff* *mp* *f* *p* *ppp*

8va..... *una corda*

Vln. I *arco* *mp* *pp* *niente* *con sord.* *p* *f* *arco* *pp* *con sord.*

Vln. II *arco sul pont.* *gliss.* *pp* *mf* *pizz.* *f* *f* *pp*

Vla. *arco sul pont.* *pp* *f* *pp* *ord.* *f* *pp* *niente*

Vc. *arco* *pp* *f* *pp* *con sord.* *f* *pp* *niente*

61

Fl. *f* *pp* *f* *p* *ff* *p* *f* *p* *breath, no tone*

Cl. *pp* *pp* *f* *pp* *enharmonic trill*

Hp. *f* *pp* *f* *ff* *B₃, D₃, F₃, G₃* *ff* *B₃, E₃, D₃*

Pno. *p* *ff* *mp*

Vln. I *sul pont.* *ord.* *f* *p* *mp* *ff* *mf* *ff* *G.P.* *C*

Vln. II *f* *pp* *pizz.* *mp* *ff* *mf* *ff* *arco (sord.)* *pp* *gliss.* *f*

Vla. *con sord.* *p* *f* *mf* *ff* *pp* *nat. harmonic gliss.* *pp* *gliss.* *f*

Vc. *f* *mf* *ff* *f* *ff* *pp* *gliss.* *f*

68

Fl. *pp* *f* *pp* *f* *ppp* *ff* *p*

Cl. *p* *ff* *pp* *ff* *pp* *pp* *ff*

Hp. *mf* *p* *mf* *p*

Pno. *mf* *pp*

Vln. I *f* *ppp* *pizz.* *mf* *ff* *sul pont.* *gliss.* *ord.* *pp* *f* *ppp* *mf* *niente*

Vln. II *ppp* *ppp* *mf* *ff* *arco (sord.)* *pp* *f* *ppp* *sul pont.* *ff* *pp*

Vla. *gliss.* *ppp* *pizz.* *mf* *ppp* *arco (sord.)* *ppp* *mf* *arco (sord.)* *ppp* *gliss.* *mf*

Vc. *mf* *pizz.* *mf* *pp* *gliss.* *mf*

74

Fl. *f* *pp* *f* *ppp* slap-tongue *f*

Cl. *pp* *f* *f*

Hp. *pp* *f* ϕ A \flat , B \flat , C \flat , D \flat , F \flat

Pno. *f*

Vln. I *p* *f* *ord.* *mf* *f* *ff*

Vln. II *f* *mf* *pp* *f*

Vla. *ppp* *f* *pizz.* *arco* *gliss.* *mf* *p* *ppp* *f* *pizz.*

Vc. *pp* *f* *sul pont.* *p* *f* *ord.* *f* *p* *f*

79

Fl. *ff* *flz.* *ff* *pp* *f* *p* *f* *flz.*

Cl. *p* *ff* *pp* *ff* *ppp* *f*

Hp. *mf* *ff* ϕ

Pno. *mp* *ff* *pp* *ff* *f* *loco* *8va...1* *8va...2*

Vln. I *p* *pp* *f* *sul pont.* *5* *ord.*

Vln. II *mf* *pp* *f* *ppp* *pizz.* *f* *arco* *sul pont.* *pp*

Vla. *mf* *pizz.* *ff* *arco* *(sord.)* *pp* *ff* *f* *pizz.*

Vc. *mf* *ff* *pp* *ff* *p* *f* *p* *f*

84

Fl. *pp* *f* *3* *p* *f* *3* *mp* *f* *3* *ff* *ppp*

Cl. *p* *f* niente *mp* *f* *4* *mp* *f* *ff* *ppp*

Hp. Φ Eb, Fb, Gb *f* *ff*

Pno. *mp* *loco* *ff* *p*

Vln. I *ppp* *mp* *f* *ff* *ppp*

Vln. II *ord.* *pizz.* *f* *arco (sord.)* *ppp* *mf* *ff* *ppp*

Vla. *pp* *ff* *pizz.* *mf* *ff*

Vc. *pp* *ff* *pizz.* *mf* *ff*

90

Fl. *ff*

Cl. *ff*

Hp. Φ Bb, Cb, Gb, Bb *mp*

Pno. *mf* *p* *f* *p* *f* *p* *ff* *loco* *mp* *loco* *loco*

Vln. I *ff* *pp* *f* *pp* *p* *f*

Vln. II *ff* *pp* *f* *pp* *arco senza sord.* *pp* *mp* *ppp* *sul pont.* *ord.*

Vla. *pp* *f* *mp* *ppp*

Vc. *f* *p* *f* *p* *f* *5* *3*

97

Fl. *ff* *f* *pp* *f* *pp*

Cl. *ff* *pp* *f*

Hp. *ff* *mp* *f* *mp* *f*

Pno. *ff* *mp* *f* *mp* *f sub.*

Vln. I *ff* *pp* *f* *pp* *f*

Vln. II *ff* *pp* *f* *pp* *f*

Vla. *ff* *pp* *ord.* *f* *pp* *f*

Vc. *niente* *f* *pp* *ff* *pp* *f*

102

Fl. *ff* *pp* *f* *pp* *lip bend* *gliss.* *p* *f* *pp* *slap-tongue* *fp* *pp* *ff* *pp*

Cl. *ff* *pp* *f* *pp* *f* *ff* *ff* *pp*

Hp. *ff* *pp* *f* *pp* *p* *ff* *ff* *pp*

Pno. *ff* *pp* *f* *pp* *mp* *ff* *ff* *pp*

Vln. I *pp* *mf* *pp* *f* *p* *ff* *pp* *ff*

Vln. II *pp* *ff* *pp* *f* *pp* *ord.* *gliss.* *mf* *niente* *f* *pp* *arco* *pp* *ff* *pp*

Vla. *ff* *pp* *f* *pp* *ord.* *gliss.* *mf* *niente* *f* *pp* *arco* *pp* *ff* *pp*

Vc. *ff* *pp* *f* *pp* *ord.* *gliss.* *mf* *niente* *f* *pp* *arco* *pp* *ff* *pp*

108

breath, no tone

Fl. *ff* *pp* *f* *ff* *pp*

Cl. *ff* *pp* *ppp* *mf* *ff*

Hp. *mp* *f* *E₂* *F₂*

Pno. *f* *mp*

Vln. I *p* *niente* *ff* *ppp* *mp* *ppp* *f* *ff* *pp*

Vln. II *p* *niente* *ff* *ppp* *niente* *pp* *f* *f*

Vla. *ffpp* *niente* *pp* *mf* *mf* *ff* *pp* *f* *pp*

Vc. *ffpp* *niente* *ff* *pp* *mf* *pp* *niente* *f* *mp*

sul pont. *pizz. (ord.)* *arco* *sul tasto* *sul pont.* *pizz. ord.*

gliss. *gliss.*

115

Fl. *p* *f* *pp* *f* *pp* *ff* *ppp* *ff*

Cl. *p* *f* *pp* *niente* *pp* *ff* *ppp* *slap-tongue*

Hp. *pp* *f* *p* *f*

Pno. *mf* *p* *mf* *f*

Vln. I *p* *ff* *mf* *f* *pp* *ff* *sempre* *sul pont.* *ord.* *sul tasto*

Vln. II *mp* *ff* *pp* *mf* *pp* *ff* *ppp* *pizz.* *ff*

Vla. *mp* *p* *pp* *arco* *ff* *ppp* *f* *pp* *ff*

Vc. *mf* *p* *pp* *arco* *ff* *ppp*

ord. *gliss.* *arco* *pizz. (ord.)* *loco*

enharmonic trill *8^{va}...* *8^{va}...*

122

Fl. *pp* *ff* *ppp* *ff* *p* *ff* *p* *ff*

Cl. *pp* *ffpp* *ff* *gliss.* *ppp* *ffp* *pp*

Hp. Φ D \flat , E \flat

Pno. *p* *f* *mf* *f* *p*

Vln. I *ppp* *ff* *ppp* *f* *p* *f* *pp*

Vln. II *ppp* *ff* *f* *ord.*

Vla. *ppp* *ff* *f* *ord.*

Vc. *ff* *ppp* *ff* *ppp* *ff* *ppp* *pp*

gliss. *ord.* *arco* *sul tasto* *sul pont.*

126

Fl. *pp* *ff* *pp* *f* *p* *f*

Cl. *ff* *pp* *ff* *pp* *pp* *f* *ppp*

Hp. *mf* *ff* Φ F \sharp , G \sharp , A \sharp

Pno. *mf* *ff*

Vln. I *pp* *ff* *pp* *mp* *f* *p* *f* *p* *f* *pp* *f* *pp*

Vln. II *ff* *pp* *ff* *pp* *f* *pp* *f* *pp* *niente*

Vla. *ff* *pp* *ff* *pp* *f* *pp* *f* *pp* *niente*

Vc. *ff* *pp* *f* *pp* *sul pont.*

flz. *ord.* *pizz. (ord.)* *arco* *gliss.* *sul pont.* *niente*

133

Fl. *pp* *ff* *pp* *ff* *pp* *p* *f* *ppp*

Cl. *pp* *f* *pp* *p* *ff* *pp*

Hp.

Pno.

Vln. I *ord.* *mp* *p* *ff* *p* *f* *ff* *pp* *p* *f* *p*

Vln. II *p* *ff* *pizz.* *arco* *pp*

Vla. *sul pont.* *pp* *ff* *ord.* *ff* *pp* *sul pont.*

Vc. *ff* *ppp* *ff* *pp* *ff* *ppp*

139

Fl. *f* *ff* *pp* *mf* *pp* *f*

Cl. *f* *p* *f* *ff* *pp* *mf* *pp* *f*

Hp.

Pno.

Vln. I *f* *pizz.* *arco* *ff* *p* *ppp* *f*

Vln. II *f* *pp* *ff* *p* *f* *pp* *f*

Vla. *p* *f* *pizz.* *arco* *gliss.* *sul tasto* *ppp* *f*

Vc. *f* *p* *ff* *f* *p* *f* *pp*

145

Fl. *pppp* *f* *ff* *p* *f* *pp* *f* *f*

Cl. *f* *ff* *pp* *f*

Hp. *f* *ff* *pp* *f* *B \flat , D \sharp*

Pno. *f* *ff* *pp* *f*

Vln. I *arco* *pp* *mf* *pp* *f* *ff* *p* *f* *pp* *f* *pizz.* *f* *arco*

Vln. II *pp* *ff* *pp* *f* *p* *f*

Vla. *ord.* *pp* *ff* *pp* *f* *pp* *f*

Vc. *ff* *f*

154

Fl. *p* *f* *pp* *ff* *p* *ff*

Cl. *f* *p* *pp* *ff* *slap-tongue* *f*

Hp. *G \sharp , A \flat* *Φ G \sharp , A \sharp* *ff*

Pno. *f* *ff* *p* *loco*

Vln. I *p* *f* *pp* *ff* *p* *ff*

Vln. II *pp* *f* *pp* *ff* *p* *ff*

Vla. *pp* *f* *pp* *ff* *sul pont.* *ord.* *pizz.* *mp*

Vc. *pp* *f* *pp* *f* *ff* *ff* *pizz.* *p*

170 flz.

Fl. *ff* *pp* *f* *ff* *pp* *ff*

Cl. *ff* *pp* *p* *ff*

Hp. *ff*

Pno. *ff*

Vln. I *sul pont.* *ord.* *f* *p* *ff*

Vln. II *sul pont.* *ff* *ord.* *pp* *ff*

Vla. *sul pont.* *ff* *pp* *pizz. (ord.)* *ff* *arco*

Vc. *sul pont.* *pp* *ff* *pizz. (ord.)* *arco*

174

Fl. *pp* *ff* *pp* *ff*

Cl. *pp* *ff*

Hp. *mp* *F#* *ff*

Pno. *ff* *loco*

Vln. I *gliss.* *niente* *ff* *p* *ff*

Vln. II *pp* *ff* *(L)* *p* *ff*

Vla. *3* *4* *3* *5*

Vc. *3* *4* *3* *5*

179

Fl. *p* *ff*

Cl. *p* *ff*

Hp. Φ F# Φ C \flat

Pno. *ff* *loco* *loco*

Vln. I *p* *ff* *pp* *ff*

Vln. II *p* *ff* *pp* *ff*

Vla. *mf* *ff* *pp* *fff* *arco* *ord.*

Vc. *mf* *ff* *pp* *ff*

sul pont. *ord.* *sul pont.* *ord.*

sul pont. glass. *ord.* *sul pont.* *ord.*

sul pont. *sul pont.* *pizz. (ord.)*

183

Fl. *slap-tongue*

Cl. *slap-tongue*

Hp. Φ C#

Pno. *loco* *loco*

Vln. I *sul pont.* *ord.*

Vln. II *sul pont.* *ord.*

Vla. *sul pont.* *ord.*

Vc. *sul pont.* *ord.*

186

Fl. *ff* *pp* *flz.*

Cl. *ff* *ppp*

Hp. *ff* *ppp*

Pno. *ff* *fffz* *ppp*

Vln. I *ff* *pp* *ppp*

Vln. II *ff* *pp* *ppp*

Vla. *ff* *pp* *ppp*

Vc. *ff* *pp*

G.P. *ff* *pp* *ppp*

una corda
sul tasto

sul pont.
ord.

FLOTSAM

Chris Gendall
(2008)

For Xak Bjerken and MAYFEST, 2008

FLOTSAM

Chris Gendall
(2008)

INSTRUMENTATION:

Clarinet in Bb

Percussion (1 player):

Xylophone

Bass Drum

2 Bongos

Woodblock

Tambourine

Crotales (sounding *15ma*)

China Cymbal

Sizzle Cymbal

Cabasa

Violin

Piano

Transposed Score

PERFORMANCE NOTES:

General:

All movements should be performed *attacca*: without a break.

Clarinet:

Multiphonic fingerings are suggestions only. Other fingerings may be substituted for the same result.

Percussion:

All instruments should be arranged for swift changes. Bass Drum, Bongos and Woodblock should be positioned to be played *simultaneously*.

If a superball is unavailable then a thumb-roll will suffice.

Piano:

Pedal changes indicated with an arrow indicate the rhythmic articulation of each change, i.e., where the pedal should “catch” the resonance of the staccato articulation.

FLOTSAM I

Chris Gendall
(2008)

$\text{♩} = 84$

Clarinet in B \flat

Percussion

Violin

Piano

ffp *5* *ff* *p* *3* *ff* *3* *3* *5* *pp*

Crotales
metal beaters

dampen
 ϕ

Tambourine
thumb-roll

ff *p* *3* *ff* *p* *ff* *3* *3* *3* *pp*

$\text{♩} = 84$

ff *15^{ma}* *loco* *8^{va}* *3* *8^{va}* *loco* *3*

Ped.

Cl.

Perc.

Vln.

Pno.

3 *ff* *5* *pp* *5* *mp* *f sub.* *3*

Crotales
arco

p *ff* *p* *f* *f*

Tambourine

ff *7* *pp* *f sub.* *3*

sul pont. *sul tasto* *ord.*

(8) *p* *3* *3* *ff* *pp* *3* *f* *3*

loco *3* *3* *3* *3*

Ped.

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5

Cl. *p f* 5 3 *pp* *ff* 3 *pp* *ff*

Perc. [Crotales] metal beaters 3 dampen Φ arco *p ff*

Vln. *p f* 5 3 *pp* 7 *ff* *pp* *ff*

Pno. 5 3 *ff* 8^{va} *loco* Ped.

7

Cl. 3 *ffp* niente *ppp* [Bass Drum] 3

Perc. pizz. *ff* arco *ppp* 5

Vln. *loco* 3 3 3 5

Pno. 3 5 5

9

Cl. *ff* 3 *ff* *p* 3 *ff* *pp*

Perc. [Tambourine] Bongos with fingers [Bass Drum] (fingers)

Vln. 5 *ff* *pp* 3 *ff* *p* *ff* 3 *pp*

Pno. 5

10

Cl. *ff sub.* China Cymbal
soft mallet *ppp* Bass Drum
hard mallet

Perc. *f*

Vln. *ff sub.* *8va* *ppp* *sul tasto* *p*

Pno. *p* *7* *ff* *8va* *loco* *3* *mp*

12

Cl. *ff* *pp*

Perc. Xylophone

Vln. *ff* *8va* *pp* *ord.*

Pno. *ff* *8va* *5* *ffz*

14

Cl. *ff* *pp* *ppp*

Perc. Bass Drum
hard mallet *ff* *mp*

Vln. *ff* *loco* *pp* *ppp* *7*

Pno. *3* *3* *3* *mp*

15

Cl. *ff* *Xylophone*

Perc.

Vln. *ff* *8va*

Pno. *ff*

16

Cl. *pp* *ppp*

Perc.

Vln. *ppp*

Pno. *mp* *loco* *ff* *8va*

17

Cl. *ff* *pp* *ff* *pp* *ff* *ppp* *ff* *Xylophone*

Perc. *Bass Drum with fingers*

Vln. *ff* *pp* *ff* *pp* *ff* *ppp* *ff* *sul tasto* *ord.*

Pno. *8va* *loco* *8va*

19

Cl. $\leftarrow \text{♩} = \text{♩} \rightarrow$ ($\text{♩} = 126$)

Perc.

Vln.

Pno.

ppp *ff* *pp* *ff*

loco

8va

8va

Ped.

21

Cl.

Perc.

Vln.

Pno.

fff *p* *fff* *poss.* *fff* *poss.* *fff* *poss.*

8va *15va*

8va

Ped.

23 **A**

Cl. *ppp* *mp* *ppp*

Perc. China Cymbal arco *ppp* *mf*

Vln. pizz. *ppp* sub. *3* *3* *3* *3*

Pno. *ppp* sub. *loco* *3* *3* *3* *3*

27

Cl. *ppp* *mp* *ppp*

Perc. China Cymbal arco *pp* *f*

Vln. arco sul pont. *mp* *ppp* ord. *mf*

Pno. *3* *3* *5* *3* *3*

31

Cl. *ppp* *f*

Perc. Bass Drum superball *mp* *ff*

Vln. pizz. *pp* *3* *3* arco *pp* *ff*

Pno. *3* *3* *f*

Red.

35

Cl. *ppp*

Perc. *pp* *ff* *ppp* *mf* *ppp*

Vln. *ppp* *mf* *ppp*

Pno. *mf* *loco* *ppp*

8va *8va* *3* *5* *3*

Crotales arco *sul pont.* *pizz. ord.*

Ped.

39

Cl. *ppp* *ff* *ppp* *ff* *ppp*

Perc. *pp* *ff* *mf* *arco* *f* *dampen*

Vln. *ppp* *mf* *loco* *ppp*

Pno. *mf* *loco* *ff* *ppp*

3 *5* *3* *5* *3* *5*

Bass Drum superball *Crotales metal beater* *arco* *pizz. ord.*

8va *8va* *3* *5* *3* *5*

mf *ppp*

Ped.

43

Cl.

Perc.

Vln. *ppp* *f* *ppp*

Pno. *ppp* *f* *p*

3 *5* *3* *5* *3* *5*

47 **B**

Cl. *ffpp* *mp* *ppp* niente

Perc. Bongos Bass Drum with fingers *ff* *p* *ppp* *arco* *p* *ppp* *pizz.* *mp* *ppp*

Vln. **B** *ffpp* *mp* *ppp* niente *ppp*

Pno. *ff* *p* *ppp* *loco* *3* *3* *5*

8^{va} 8^{va}

52

Cl. *mp* *ppp* *3*

Perc. *3* niente *arco sul tasto* *mp* *ppp*

Vln. *3* *mf* *mp* *ppp*

Pno. *3* *mf* *p* *f* *ppp* *loco* *3*

(8).....

57

Cl. *p* *ppp* *mp* *ppp*

Perc. [China Cymbal] *arco* *pp* *mf*

Vln. *sul pont.* *sul tasto* *ppp* *ord.* *mp* *ppp*

Pno. *3* *3* *3* *3*

[illegible]

The musical score for "The Great Wall" by John Adams is presented for four instruments: Clarinet (Cl.), Percussion (Perc.), Violin (Vln.), and Piano (Pno.). The score is in 3/4 time and consists of four measures. The Clarinet part features complex rhythmic patterns with triplets and quintuplets, dynamic markings ranging from *pp* to *fff*, and articulation marks like accents and slurs. The Percussion part includes a China Cymbal and a Bass Drum, with dynamic markings like *p* and *pp*. The Violin part has a melodic line with dynamic markings like *pp* and *ff*, and includes a glissando. The Piano part features a bass line with dynamic markings like *mp* and *f*, and includes a glissando. The score is annotated with various performance instructions and dynamic markings.

19

Cl.

Perc.

Vln.

Pno.

C

ppp *ff* *ppp* *ff* *mf*

Tambourine with fingers

Cabasa

Bongos with fingers

ff *ppp* *ff* *pizz.* *arco* *gliss.* *ppp* *f* *ppp* *loco*

C

ff *pp* *ff* *pp* *f* *ppp* *f* *ppp* *loco*

8^{vb} 8^{vb} 8^{vb}

25

Cl. *pp* *f* *p* *ff* *ppp* *ff* *ppp* *ff* *pp* *sub.*

Perc. Tambourine thumb-roll Crotales arco dampen Tambourine with fingers

Vln. *f* *pizz.* *ff* *ff* *ppp* *ord.* *ff* *pp*

Pno. *mf* *p sub.* *ff*

loco

ff *8^{va}* *8^{va}*

30

Cl. *ff* *3* *mp* *f* *ppp* *f*

Perc. Cabasa

Vln. *ff* *ppp* *ff* *mp*

Pno. *sfz* *ppp* *mf* *p*

loco *una corda*

35

Cl. *p* *ppp* *f* *ppp*

Perc. Crotales arco China Cymbal arco Tambourine with fingers

Vln. *ppp* *f* *ppp* *ord.* *ff* *f*

Pno. *ff sub.* *mp* *ff* *mp*

8^{va} *8^{va}*

39

Cl. *f* *ppp* *f* *ppp* *mf* *ppp* Cabasa

Perc. *ord.* *ppp* *f* *p* *3* *f* *p* *sul tasto* *pp* *<mf* *pp* *ord.*

Vln. *ppp* *f* *p* *3* *f* *p* *pp* *<mf* *pp*

Pno. *f* *mp* 1

2^{ed}

43

Cl. *mp* *pp* *3* *3* *3* *3* *f* *pp*

Perc. Sizzle Cymbal brushes Bass Drum brushes *mf* *8va* *pp* *loco*

Vln. *mf* *pp* *mf* *8va* *gliss.* *ppp* *fp* *ppp*

Pno. 2 *mp* *8va* *5* *5* *pp* *15ma* *loco* *8va* *loco*

46

Cl. *p* *3* *f* *p* *f* *ppp*

Perc. Tambourine thumb-roll China Cymbal drumstick *pp* *ff* *p*

Vln. *ppp* *mp* *3* *f* *p* *ppp*

Pno. *mf* *pp* *3* *5* *ff sub.* *p* *8va* *2^{ed}*

50

Cl. *mf* *ppp* *niente* *pp* *f* *p* *3* Cabasa

Perc. arco *pp* *mf* *p*

Vln. *mf* *ppp* *niente* *pp* *f* *p*

Pno. (8) *loco* 1 2 3 *pp* *p*

loco

55

Cl. *pp* *f* *pp* *ffpp* *ff* *ppp* *ff* Crotales metal beater

Perc. *ff* *p* *ff* *p* *ff* *ff*

Vln. sul pont. ord. sul pont. ord. gliss. *pp* *ff* *pp* *f* *pp* *ff* *sub.*

Pno. *ff* *loco* *loco*

8va *8va* *8va*

61

Cl. *p* *ffpp* *ff* *pp* *ff* *pp* *ff* *ppp*

Perc. Tambourine thumb-roll *pp* *ff* Bongos with fingers *ff* *p* Bass Drum fingers *ff* Crotales arco *pp* *ff* sul pont.

Vln. *pp* *ffpp* *ff* *pp* *ff* *pp* *f* *pp*

Pno. (8) *loco* 1 2 *pp* *ff* *pp* *ff* *pp* *ff* *pp*

8va *8va* *8va*

III

♩ = 126

Cl. *mf* *ffpp* *ppp* *mp* *pp* *ff* *ppp*

Perc.

Vln. *pp* *mf* *pp* *ff* *ppp*

Pno.

con sord.

♩ = 126

Cl. *fff* *p* *pp* *mf* *pp* *ff*

Perc. Woodblock drumstick *ff*

Vln. *fff* *pp* *mf* *ppp* *ff* *p* *ff* *pp* *ff* *mp*

Pno. *mp* *ff*

una corda

8^{va}

Cl. *>ppp* *p* *mf* *p* *ppp*

Perc. [Bass Drum] hard mallet *ff secco*

Vln. *f* *pp* *ppp* *ff* *p* *ppp*

Pno. *mp* *mf* *ff*

8^{va}

13

Cl. *mf* *ppp* *f* *ppp*

Woodblock
Bass Drum

drumstick
& mallet

Perc. *ff*

Vln. *ff* *mf* *p* *pp* *f* *ppp* sul pont. *ff*

Pno. *ff* *mp* *f* *mp*

8^{va} *loco*

17

Cl. *mf* *ff* *pp* *mf* *pp*

sim.

Perc. *ff* [Bongos] with fingers *pp* *mp*

Vln. *p* *ff* *p* *ff* *ppp* *f* ord.

Pno. *ff* *mp*

8^{va}

21

Cl. *f* *pp* *ff* *ppp* *ff* *pp*

Perc. *p* *mp* *ff*

Vln. *pp* *f* *pp* *ffpp* *ff* *pp*

Pno. *ff*

sul pont. *ord.*

8va

24

Cl. *pp* *mf* *pp* *f* *pp*

Perc. *ff* *mp* *p* *mp, ff*

Vln. *pp* *mf* *pp* *f* *pp* *ord.* *mp*

Pno. *mp* *f sub.* *mp* *ff*

loco *8va* *8va* *loco* *8va*

Bongos Bass Drum with fingers

sul tasto *sul pont.*

28

Cl. *mp* *pp* *ppp* *p* *mf* *pp* *f*

Perc. *ff* *mp* *pp* *ff*

Vln. *pp loco* *mf* *ppp* *ff* *pp* *ff*

Pno. *sffz mp* *ppp* *ff sub.* *mp*

loco *loco* *loco*

Woodblock drumstick

una corda *8va*

33

Cl. *pp* *ff* *pp* *f* *pp*

Perc. Bongos Bass Drum with fingers *ppp* sempre *p* sempre *f* *pp* *mf* *pp*

Vln. *pp* *ff* *pp* sub. *f* *pp* sul tasto *ord.* *mf* *pp*

Pno. *loco* *ff* *mp*

8^{va}

F

38

Cl. *ff* *p* *f* *pp* *f*

Perc. *f* *p* sub. *f* *pp* sub. *f* *pp*

Vln. *f* *p* sub. *f* *pp* sub. *f* *pp*

Pno. *8^{va}*

43

Cl. *ppp* *ff* *ppp* *f*

Perc. *ff* senza sord. *ord.*

Vln. *ppp* *pp* *f* *pp*

Pno. *ppp* *ff* *mf*

G

8^{va}

47

Cl. *pp* *ff* *pp* *f* *ppp* *p* *3*

Perc. *ff* *Xylophone*

Vln. *ord.* *ff* *p* *III* *ff* *pizz.* *3* *p*

Pno. *pp* *ff* *p* *3*

8^{va} *loco* *8^{va}*

50

Cl. *ff* *ppp* *ff* *pp*

Perc.

Vln. *3* *ff* *arco* *pp* *mf* *ppp* *ff* *p* *sul tasto* *f*

Pno. *3* *ff* *loco* *15^{ma}* *mp* *loco* *3*

8^{va}

53

Cl. *f* *pp* *ff* *p* *3*

Perc. *ff*

Vln. *sul pont.* *ord.* *pp* *mf* *p* *3* *ff* *15^{ma}*

Pno. *3* *f* *mp* *ff* *8^{va}*

56

Cl. *ff* *pp* *f cantando* *p* *f*

Perc. *pp* *ff*

Vln. *p* *ff* *pp* *ff* *f cantando* *ff* *f*

Pno. *loco* *mp* *ff sub.* *f* *loco* *8va* *8vb* *8vb*

60

Cl. *p* *ff* *f*

Perc. *3* *mf*

Vln. *p* *ff* *f* *loco*

Pno. *pp* *ff* *8va* *loco* *5*

(8) *8va* *8vb*

63

Cl. *ff*

Perc. *p* *ff* *p* *ff*

Vln. *pp* *ff* *loco* *8va*

Pno. *ff* *8va* *8vb* *8vb*

66

Cl. *fff*

Perc. *fff*

Vln. *fff*

Pno. *fff*

8^{va} 15^{ma} 8^{va} 8^{vb}

68

Cl. *poss.*

Perc. *poss.*

Vln. *poss.*

Pno. *poss.*

(8) 15^{ma}

EPITHETS
for Soprano and Chamber Orchestra

Text by Thomas Buddle

Chris Gendall
(2008)

EPITHETS

Chris Gendall
(2008)

INSTRUMENTATION:

Flute

Oboe

Clarinet in Bb

Bassoon

Horn in F

Trumpet in C

Trombone

Percussion (1 player):

Bass Drum

Tam-tam

2 Bongos

Crotales 2 octaves, *sounding 15ma*

China Cymbal

Sizzle Cymbal

Tambourine

Triangle

Cabasa

Piano

Soprano Solo

2 Violins

Viola

Violoncello

Double Bass

Score in C

PERFORMANCE DIRECTIONS

Soprano Solo

Text:

Among other superstitions prevailing in the land was their belief in the existence of an aerial tribe, called "*Te patupaiarehe*," or Maori Fairies. These mysterious beings have had an imaginary existence in most parts of the world, generally being supposed the most perfect and beautiful creatures, of diminutive form, living in a land of exquisite beauty, amid scenes of enchantment and loveliness...

They are not the diminutive beings they are supposed to be in most lands, but giants—a people of extraordinary dimensions. They are exceedingly numerous, and have their abode in the mountains.... Sometimes they are seen at sea, fishing; both angling and netting... They suppose them to be spirits of departed men... They sometimes pay a visit in the night and make a whole house sick and ill by trampling the inmates unmercifully as they sleep... They are said to have the power of driving men mad.

Is it not probable that these *Patupaiarehe* derive their existence from atmospheric illusion? Some of those spectral or illusory appearances which take place from the power of refraction in the atmosphere, or some other atmospheric phenomena resembling the mirage of the desert...?

There can be no doubt but similar phenomena called into existence those *pas* on the mountain tops. And as to the hostile visits paid by those aerial beings, and the severe trampling they inflicted, it is very likely to have happened after eating to repletion some unwholesome food, which produced nightmare and general sickness. A people without any knowledge of the laws of nature, and exceedingly superstitious, might be expected to account for such occurrences in this way...

Let us be thankful to Providence that our lot has been cast among the blessings of civilized life, and the privileges of a religion, the yoke of which is easy, and the burden of which is light.

And let it be our constant effort to banish all that remains of the old superstitions of the country, and to diffuse among the aborigines of our adopted land the blessings of an enlightened civilization, and the influence of a divine and happy religion.¹

Thomas Buddle, *The Aborigines of New Zealand: Two Lectures* (Christchurch, N.Z.: Kiwi Publishers, 1996).

Maori Pronunciation:

The word “patupaiarehe” is a Maori word, pronounced “pʌdtu:ˈpaɪʌrehe”. The “r” is rolled like a single “r” in Italian.

Techniques:

Three vocal technique types are employed: singing, speaking and whispering. Sung tone may use a little (but not too much) vibrato. Speaking should be strictly in time, declamatory in character, and giving natural emphasis to the correct part of a sentence or word. Whispering should be mostly white noise, without tone.


Amplification may be used for balance purposes only.


General

Notation:

One quarter-tone sharp: 

One quarter-tone flat: 

Lowest possible note, approximate pitch: 

Highest possible note, approximate pitch: 

Fingerings:

Flute, Oboe, Clarinet and Horn quarter-tone fingerings are suggestions only. Any other fingering may be substituted for the same result.

Horn

The quarter-tones in the Horn part result from the seventh partial of the overtone series, and thus fall not exactly at the quarter-tone mark between half-steps.

Percussion

Instruments should be, where possible, positioned together for swift changes. If a superball mallet is unavailable, a thumb-roll will suffice.

Thomas Buddle
(1851)

for Judith Kellock

EPITHETS

Chris Gendall
(2008)

♩ = 96

The musical score is for a piece titled "Epithets" by Chris Gendall, based on a poem by Thomas Buddle. The tempo is marked as ♩ = 96. The score is written for a full orchestra and a vocal soloist. The instruments and parts include: Flute, Oboe, Clarinet in B♭, Bassoon, Horn in F, Trumpet in C, Trombone, Percussion (with a Tam-tam), Piano, Soprano Solo, Violin I, Violin II, Viola, Violoncello, and Double Bass. The score is in 3/4 time and consists of four measures. The first measure is in 3/4 time, and the second measure is in 4/4 time. The key signature has one flat (B♭). The score includes various dynamics such as *ppp*, *ff*, *p*, *mf*, *f*, and *mp*. It also includes performance instructions like *con sord.*, *gliss.*, *sul pont.*, *pizz. (ord.)*, *arco*, *hum*, and *[mm]*. The Soprano Solo part includes a hum and a melodic line. The string parts include various techniques like *sul pont.*, *pizz.*, and *arco*. The percussion part includes a Tam-tam. The piano part includes a sustained chord. The double bass part includes a melodic line. The score is copyrighted by Chris Gendall, 2008.

Flute
Oboe
Clarinet in B♭
Bassoon
Horn in F
Trumpet in C
Trombone
Percussion
Piano
Soprano Solo
Violin I
Violin II
Viola
Violoncello
Double Bass

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6

Fl. *ppp* *f* *ppp* *ff* *pp* *f*

Ob. *ff* *ppp* *3*

Cl. *ppp* *ff* *flz.* *mf*

Bsn. *f* *ff* *3ppp* *mf*

Hn. *ppp* *ff* *flz.*

Tpt. *ff* *flz.* *mf* *gliss.*

Tbn. *ff* *mf*

Perc. *dampen* *Tambourine* *thumb-roll* *dampen*

Pno. *mp* *f* *ff* *pp* *loco* *8va* *una corda* *mf*

S. Solo *p* *ff* *sing* *mf* *hum* *pa - tu' [mm]*

Vln. I *mf* *ppp* *pizz.* *arco sul pont.* *ff* *sul pont.* *pizz. (ord.)* *pp* *mf sub. ord.*

Vln. II *ppp* *gliss.* *ff* *arco (ord.)* *mf* *arco*

Vla. *pp* *pizz.* *3* *mf sub.*

Vc. *mp* *f* *ff* *3* *mf*

Db. *f* *ff* *arco (ord.)*

49

14

Fl. *jet whistle*
f

Ob. *pp*

Cl. *pp* *f* *pp*

Bsn. *pp* *f* *pp*

Hn. *mp*

Tpt. *mp*

Tbn. *pp* *f* *pp*

Perc. *Bongos*
wire brushes
dampen *swirls*
f

Pno. *ff* *mp*

S. Solo *speaking* *whisper* *mp* *f* *mf* *ff* *mf* *ff* *mf* *ff* *sub.*
a-mong o-ther su-per-sti-tions [ss] [w] was the be-lief in the ex-is-tance of an ae-ri-al

Vln. I *ppp* *mp* *ppp* *ff* *ppp*

Vln. II *ppp* *mf* *pp* *ppp* *ff* *pp* *ff*

Vla. *ppp* *mf* *pp* *ppp* *ord.* *pizz.*

Vc. *ppp* *mf* *pp* *pp* *f* *pp* *ff* *pp*

Db. *pp* *f* *pp* *ff*

flz.

18

Fl.

mf

pp

3

ppp

f

ppp

ff

Ob.

3

pp

ppp

f

ppp

ff

Cl.

ppp

f

ppp

ff

Bsn.

Hn.

mf

pp

ppp

ff

Tpt.

f

pp

ppp

f

ppp

ff

Tbn.

Perc.

Bongos

wire brushes

attacks

3

5

3

3

ppp

p

ppp

Pno.

ppp

mp

S. Solo

mf

pp

tribe

[hum]

p

[mm]

Vln. I

ff

ppp

pizz.

5

p

ppp

ff

Vln. II

ppp

pizz.

3

p

ppp

ff

Vla.

5

3

3

5

p

ppp

arco

ff

Vc.

ppp

pizz.

5

p

ppp

arco

ff

Db.

p

3

A

23

Fl. *p* *ff* *flz.* *f* *pp* *mf* *pp* *f*

Ob. *mf* *pp* *mf* *pp* *f*

Cl. *pp* *f* *pp* *f* *pp* *f*

Bsn. *pp* *f* *pp* *mf* *pp* *f* *pp*

Hn. *f*

Tpt. *f*

Tbn. *pp* *f* *pp* *pp* *f* *pp* *f*

Perc. *pp* *f* *pp* *pp* *f* *pp* *mp*

Pno. *mf* *loco* *p*

S. Solo *fff* *mf* *ff* *whisper* *p* *ff* *hum* *pp* *ff* *hum* *p* *ff*

pa - tu' [w] [mm] — pa - tu - pai - - a' [mm]

Vln. I *arco* *sul pont.* *pp* *f* *pizz. (ord.)* *ff*

Vln. II *arco* *pp* *f* *pizz.* *ff*

Vla. *pp* *f* *pp* *f* *pp* *f* *pp* *f*

Vc. *pp* *f* *pp* *f* *pp* *f* *pp* *f*

Db. *pp* *f* *pp* *f* *pp* *f* *pp* *f*

Bass Drum *superball*

China Cymbal *soft mallet*

28

Fl. *pp* \rightarrow *f* jet whistle *ff* \rightarrow *p*

Ob. *p* *f*

Cl. *pp* \rightarrow *f* *pp* \rightarrow *f* \rightarrow *pp* *f* (3)

Bsn. *pp* \rightarrow *f* \rightarrow *pp* *f*

Hn.

Tpt. *ppp* \rightarrow *f*

Tbn. *pp* \rightarrow *f* \rightarrow *pp* *gliss.*

Perc. Bass Drum fingers superball fingers *f* *pp* \rightarrow *f* \rightarrow *pp* *f*

Pno. *f* *f* *p* 5 una corda

S. Solo whisper *fff* hum *mf* sing *f* hum *mf* sing *mf* whisper *ff* sing *mf* [w] [mm] [ah] [mm] pa - - tu - pai

Vln. I *p* *f* *p* (3) (5)

Vln. II *p* *f* *p* (3)

Vla. arco *gliss.* *pp* \rightarrow *f* \rightarrow *pp* pizz. *f* *p* (3)

Vc. arco *gliss.* *pp* \rightarrow *f* \rightarrow *pp* \rightarrow *mf* \rightarrow *pp* pizz. *f* *p* (3)

Db. arco *gliss.* *pp* \rightarrow *f* \rightarrow *pp* pizz. *f*

54

35 jet whistle

Fl. *ff* *p* *ff* *flz.*

Ob. *ff* *flz.*

Cl. *pp* *ff* *p* *ff*

Bsn. *ff*

Hn. *ff* *flz.* *mf* *ff*

Tpt. *ff*

Tbn. *ff*

Perc. [Bongos wire brushes swirls] *f* [Bass Drum wire brushes attack] *mf* [Bongos fingers] *f*

Pno. *p* *f* *p* *ff* *p* *ff*

una corda

S. Solo [whisper] *mf* [sing] *f* *p* *f* *nasal* *mp* [whisper] *ff* [sub.] [hum] *p*

pa-tu' pa' pai' pa'-pa-tu' [mm]

Vln. I *pp* *f* *pp* *ff* *mp* *ff*

Vln. II *pp* *f* *pp* *ff* *mp* *ff* *arco*

Vla. *ff* *pizz.* *arco*

Vc. *ff* *mf* *pp* *ff*

Db. *ff*

39

← ♩ = 144 →

Fl. *pp* *pp* *p* *pp* *mf*

Ob. *pp* *pp* *p* *pp*

Cl. *mf* *pp* *p* *pp*

Bsn. *mf* *ff*

Hn.

Tpt. *pp*

Tbn. *mp* *ff*

Perc. Bass Drum fingers

Pno. *mp* *ff*

S. Solo *pp* *mf*

pa-tu-pai-a - re-he

Vln. I *pp* *pp* *mf*

Vln. II *pp*

Vla. *pp* *pp* *mf*

Vc. *pp*

Db.

pizz. (ord.)

arco sul pont.

arco I II I II *sim.*

44

Fl. *p* *f* *p* *fff*

Ob. *mf* *p* *fff*

Cl. *mf* *p* *f* *fff* slap-tongue *fff*

Bsn. *fff*

Hn.

Tpt. senza sord. air, no tone
[tu] *f* *p* *f* [t]

Tbn. senza sord. air, no tone
[tu] *f* *p* *f* [t]

Bass Drum
attack swirl attack
fff *mp* *fff*

Perc. dampen lowest 2 strings
+ *fff* dampen sim. sempre
+ *fff*

Pno. *fff* stroke lower strings *f* violent *fff*

S. Solo

Vln. I ord. *pp* *f* *fff* *pp* *mp* sul pont. *p* *pp* *ppp*

Vln. II arco *f* *fff* *pp* *mp* *pizz.* *p* *ppp*

Vla. *pp* *f* *fff* *pp* *mp* *pizz.* *p* *ppp*

Vc. *f* *fff* *pizz.*

Db. *fff*

48

G.P. **B** tongue-ram jet whistle

Fl. *ff* *pp*

Ob. *ppp*

Cl. slap-tongue *ff* *p* *ppp*

Bsn. *ff* *ppp*

Hn.

Tpt.

Tbn. air sim. sempre flz. *ffp* *ppp*

Perc. [Bass Drum fingers] *ff* *p* *ppp*

Pno. *ff*

S. Solo *pp* *p* *pp* *ff* *mp* *arco*
 fai - ries_ these mys - te - rious crea - tures have had

Vln. I G.P. **B** *p* *ppp* *arco sul pont.*

Vln. II *ppp* *ff* *p* *ppp* *arco sul pont.*

Vla. *ff* *p* *ppp* *arco sul pont.*

Vc. *ff* *ppp*

Db. *ff*

54

Fl. *f* *f* *pp* 5

Ob. *mf* *f* *pp*

Cl. *mf* *pp* *mf* *ppp* 3

Bsn. *pp* 3 3

Hn. *air sim. sempre*

Tpt. *[tu]* *fp* *ppp*

Tbn. *[tu]* *fp* *ppp*

Perc. *China Cymbal* *wire brushes* *mf* *Bongos* *drumsticks on casing* *mf* 3 *p* *dampen*

Pno. *stroke lower strings* *mf* *una corda* *mf* *pp*

S. Solo *an i - ma - gi - na - ry ex - is - tance in most parts of the world* *pp* 3

Vln. I *mf* *ppp* *ord.* *f* *sul pont.* *mp* *pp*

Vln. II *mf* *ppp* *ord.* *f* *pizz.* *f* *p* 3

Vla. *mf* *ppp* *ord.* *f* *sul pont.* *mp* 3 *pp*

Vc. *mf* *ff* *pizz. (ord.)*

Db. *(IV)* *ff*

58

Fl. *mf* $\xrightarrow{3}$ *pp* *ff* $\xrightarrow{5}$ tongue-ram

Ob. *mf* *pp* *ff* $\xrightarrow{5}$

Cl. *pp* *ff* slap-tongue

Bsn. *mf* $\xrightarrow{3}$ *pp* *ff* 1/2 valve gliss.

Hn. *ff* $\xrightarrow{\text{gliss.}}$ *ppp* 1/2 valve gliss.

Tpt. *ff* $\xrightarrow{\text{gliss.}}$ *ppp*

Tbn. *ff* $\xrightarrow{\text{gliss.}}$ *ppp*

Perc. *ppp* $\xrightarrow{3}$ *f* China Cymbal drumstick dampen *ff* Bass Drum fingers

Pno. *ff*

S. Solo *p* $\xrightarrow{3}$ *ff* $\xrightarrow{3}$ *pp* $\xrightarrow{\text{hum}}$ *mf* $\xrightarrow{\text{[mm]}}$ *ppp*

the most per-fect and beau-ti-ful crea-tures

Vln. I *pizz. (ord.)* *p* *ff* $\xrightarrow{\text{sub.}}$ *ff* $\xrightarrow{\text{arco}}$ *ppp* $\xrightarrow{\text{gliss.}}$ *ppp* $\xrightarrow{\text{sul tasto}}$ *ppp* $\xrightarrow{\text{gliss.}}$ *ppp*

Vln. II *ff* *ff* $\xrightarrow{\text{arco}}$ *ppp* $\xrightarrow{\text{gliss.}}$ *ppp* $\xrightarrow{\text{sul tasto}}$ *ppp* $\xrightarrow{\text{gliss.}}$ *ppp*

Vla. *pizz. (ord.)* *p* *ff* *p* $\xrightarrow{\text{arco (IV)}}$ *ppp* *pizz.* *ff* *pizz.* *ppp*

Vc. *ff* *p* *ppp* *ff* *ppp*

Db. *ff* *ppp* *arco* *ppp*

64

Fl.

Ob.

Cl.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Pno.

S. Solo

Vln. I

Vln. II

Vla.

Vc.

Db.

(air sim.)

[tu]

fp

(air sim.)

[tu]

fp

Bass Drum

wire brushes

swirl

f

pp

stop

niente

stroke lower strings

f

p

8va

2va

sing

p

whisper

3

mi-nu-tive

sing

form

hum

mf

[mm]

niente

pizz. (ord.)

5

f

p

niente

pizz. (ord.)

3

f

p

arco

p

arco

p

3

arco

gliss.

pp

f

p

f

p

f

p

70

Fl. *f* *p* *ppp*

Ob. *p* *ppp*

Cl. *f* *pp* *ppp*

Bsn. *f* *pp*

Hn. *fp* *ppp*

Tpt.

Tbn.

Perc. Sizzle Cymbal drumstick *mf*

Pno. *f sub.* *pp*

S. Solo

Vln. I sul pont. *fp* *ppp* ord. *p* pizz. *dim.*

Vln. II sul pont. *pp* *f* *p* ord. *p* pizz. *dim.*

Vla. *mf* *pp* *f sub.* *p* pizz. *dim.*

Vc. arco *pp* *mf* *pp* *ff* *p* *mf* *pizz.* *dim.*

Db. *ppp* *mf* *p* *ppp*

63

80 **D**

Fl. *ff* tongue-ram *ff*

Ob. *ff*

Cl. *ff* slap-tongue *ff* *pp*³

Bsn. *ff* *ff* *pp*³

Hn. 1/2 valve gliss. *ff* *ppp*

Tpt. 1/2 valve gliss. *ff* *ppp*

Tbn. *ff* *ppp*

Perc. China Cymbal drumstick dampen *ff* Bass Drum fingers *ff*

Pno. *ff* *ff* *pp* *ppp* *fff* 8^{va}

S. Solo *mf* sing *p* en - chant - ment *p* whisper *mf* and love-li-ness

Vln. I *ff* *ppp* pizz. *ff* *pp* *ff* pizz.

Vln. II *ff* *ppp* pizz. *ff* *pp* *ff* pizz.

Vla. *ff* *ppp* pizz. *ff* *pp* *ff* pizz.

Vc. *ff* *ppp* pizz. *ff* *pp* *ff* pizz.

Db. *ff* *ff* *pp* *ff*

85 G.P. jet whistle jet whistle

Fl. *fff* *p* *fff* *ff*

Ob.

Cl. enharmonic trill *ppp* *ff*

Bsn.

Hn.

Tpt. (air sim.) [tu] *fff* *p* [t] *fff* [tu] *ff*

Tbn. (air sim.) [tu] *fff* *p* [t] *fff* [tu] *ff*

Perc. Tam-tam *mf* Sizzle cymbal wire brushes *f* Bass Drum wire brushes swirl *p* *f* *mf* *ff* attack

Pno. stroke lower strings *fff* *f* stroke lower strings *fff*

8^{va} 8^{va}

S. Solo *fff* *ppp* [ss] arco gliss.

Vln. I G.P. *pp* *fff* *ppp* *f* *ppp* niente

Vln. II *pp* *f* *pp* *ppp* *f* *ppp* sul pont.

Vla. *pp* *f* *pp* *ppp* *ff*

Vc. *fff* *pp* *f* *pp* *ff*

Db. *fff* *f* *pp*

91

Fl. *pp* *pp* *< f*

Ob. *pp* *ppp*

Cl. *pp* *< f*

Bsn. *pp* *< f*

Hn. *fpp* *ppp*

Tpt. *ppp*

Tbn. *ppp* *fpp* *ppp*

Perc. *swirl* *p* *f* *p* *ff* *swirl* *stop*

Pno. *stroke lower strings* *p* *f* *p* *fff* *stroke lower strings* *mf*

S. Solo *[hum]* *p* *ff* *[sing]* *mp* *ppp* *[sing]* *ff* *p* *mf* *pp* *mp* *> pp*
 [mm] pa' [mm] [mm] pa - tu - pai' [i] a re-he

Vln. I *pp* *ppp*

Vln. II *pp* *< mf* *sul pont.* *p* *ppp*

Vla. *ord.* *pp* *< p* *ppp*

Vc. *pp* *p* *ppp*

Db. *f* *p* *ppp*

97

G.P.

Fl.

Ob.

Cl.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

f

+
8va
fff

S.
Solo

pa- tu - pai - a - re-he'he'he' he' he' he' he' he' he'

mp mf ppp sub. 3

Vln. I

Vln. II

Vla.

Vc.

Db.

103 **E**

Fl. *mp* *ppp* *p* *ppp*

Ob. *mp* *ppp* *p* *ppp*

Cl. *mp* *ppp* *p* *ppp*

Bsn. *p* *ppp*

Hn. *-*

Tpt. *-*

Tbn. *-*

Perc. Triangle *mp* *dampen* Crotales brass mallets *mf*

Pno. *mp* *f* *mf*

S. Solo *mp* *whisper* *sing* *mf nasal*

are not the di mi - nu - tive crea - tures they are sup - posed to be in most lands but — gi -

Vln. I *pp* *mp* *pp* *ff* *p* *ppp*

Vln. II *pp* *mp* *pp* *ff* *p* *ppp*

Vla. *pp* *mp* *pp* *ff* *p* *ppp*

Vc. *pp* *mp* *pp* *f sub. pizz.* *pp* *ff* *p* *ppp*

Db. *f* *arco* *gliss.* *ppp*

[illegible]

111

Fl. *mf* 3 *pp* *ppp*

Ob. *mf* 3 *pp* *ppp*

Cl. *pp* *mf* 3 *ppp*

Bsn. *mf* *ppp* *f* *pp*

Hn.

Tpt.

Tbn. *ppp* con sord.

Perc. Bongos
drumsticks
on casing *pp* 3 *mf* 3 *pp* 5 *mp* Triangle

Pno. *mf* 3 *mf* 3 *mf*

S. Solo *whisper* 3 *sing* 3 *mf* *pp* *some - times*

nu-me-rous and have their a-bode in the moun-tains arco non-vib. non-vib.

Vln. I *pizz.* *p* 3 *f* *ppp* *f* *ppp* *non-vib.*

Vln. II *pizz.* *p* 3 *f* *ppp* *f* *ppp* *non-vib.*

Vla. *pizz.* *p* 3 *f* *ppp* *f* *ppp* *non-vib.*

Vc. *<mf* *ppp* *f* *pp* *ppp* *f* *pizz.*

Db. *ppp* *mf* *ppp* *f*

116

Fl. *f* *ppp* *ff*

Ob. *f* *ppp* *ff*

Cl. *f* *ppp* *ff*

Bsn.

Hn. *ppp* *f* *ppp*

Tpt.

Tbn. *f* *ppp* *f* *ppp*

Perc.

Pno. *mp*

S. Solo *f* *mf* *p* whisper
they are seen at sea fish-ing ang-ling net-ting

Vln. I *f* *ppp* *ff* (non-vib.) *ppp* *f* *ppp*

Vln. II *f* *ppp* *ff* (non-vib.) *ppp* *f* *ppp*

Vla. *f* *ppp* *ff* (non-vib.) *ppp* *f* *ppp*

Vc. *ppp* *ff* *ppp* *f* *ppp*

Db.

123

F

Fl. *ff* *ppp* *3* *mf* *ppp*

Ob. *ff* *ppp* *3* *ppp* *mf* *ppp*

Cl. *ff* *ppp* *3* *f* *ppp* *mf* *ppp*

Bsn. *f* *3*

Hn.

Tpt.

Tbn.

Perc. *Crotales* *mf*

Pno. *mf* *8va*

S. Solo *mp* *mf* *pp* *f* *p*
 some-times they pay a vi-sit in the night and make a—

F

Vln. I *ff* *ppp* *f* *ppp* *f* *ppp* *mf* *ppp* *mf*

Vln. II *ff* *ppp* *f* *ppp* *f* *ppp* *f* *pp* *gliss.*

Vla. *ff* *ppp* *f* *ppp* *mf* *ppp* *f* *pp* *gliss.*

Vc. *ff* *ppp* *f* *ppp* *mf* *ppp* *mf*

Db. *pizz.* *f*

127

Fl.

Ob.

Cl.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Pno.

S. Solo

Vln. I

Vln. II

Vla.

Vc.

Db.

ppp

ppp

mf *ppp* *mp* *ppp*

p *f* *p* *ppp*

ppp *f* *ppp*

ppp *f* *ppp*

f *mp*

loco *5* *ppp*

f *p*

una corda

speak *mf*

whole house sick by

pizz. *p* *pp*

niente *p* *pp*

sul tasto *pp* *f* *fp*

arco *gliss.*

fp *ord.* *gliss.*

pp *f* *fp*

sul tasto *pp* *f* *fp*

pp *niente* *f* *fp* *(pizz.)*

mf

130 $\leftarrow \text{♩} = 72 \rightarrow$

Fl. *f* *ppp*

Ob. *f* *ppp*

Cl. *f* *ppp*

Bsn.

Hn.

Tpt. *f* *pp* niente

Tbn. *f* *pp* niente

Perc. Bass Drum fingers *ppp* *mf*

Pno. dampen lowest 2 strings *mf*

S. Solo *ff* *mp*
tramp-ling the in-mates un-mer-ci-ful-ly as they sleep

Vln. I *ppp* *mf* *ppp*

Vln. II *ppp* *gliss.* *f* *ppp* *mf* *ppp*

Vla. *ppp* *gliss.* *f* *ppp* *mf* *ppp*

Vc. *ppp* *mf* *ppp* pizz. *mf*

Db. *mf*

134

Fl. *pp* $\leftarrow f$

Ob.

Cl. *pp* $\leftarrow f$ *pp*

Bsn. *pp* $\leftarrow f$ *pp*

Hn.

Tpt. *pp* $\leftarrow f$
senza sord.

Tbn. *pp* $\leftarrow f$ *pp*
gliss.

Perc. *pp* $\leftarrow f$ *pp*
superball

Pno. *p* $\leftarrow f$
dampen sim. sempre
Ped.

S. Solo *pp* *mp* *p* $\leftarrow ff$ *mf*
[hum] [whisper]
they sup-pose them to be the spi-rits of de-par-ted men [mm]— they are said to have the po-wer of dri-ving men mad

Vln. I sul pont. *ppp* $\leftarrow f$

Vln. II sul pont. *ppp* $\leftarrow f$

Vla. sul pont. *ppp* $\leftarrow f$ *pp* $\leftarrow f$ *pp*
ord. gliss.

Vc. sul pont. *ppp* $\leftarrow f$ *pp* $\leftarrow f$ *pp*
ord. gliss.

Db. *pp* $\leftarrow f$ *pp*
arco gliss.

G

137

Fl.

Ob.

Cl.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Pno.

S. Solo

Vln. I

Vln. II

Vla.

Vc.

Db.

senza sord.
air, no tone

[tu] *fp* *pp* [t] *f*

air, no tone

[tu] *fp* *pp* [t] *f*

fingers
f *p*

(8) *f* *pp* *f*

is it not pos-si-ble that these

pa' [mm]

de - rive their ex-is - tance

speaking

sing *f* hum *p* pulse

niente

speaking *mf*

pizz. (ord.) *f* arco *mp* pizz. *mp*

ord. *ppp* pizz. *mp*

ppp *mp*

pizz. *ppp* *f* sub. *mp*

mf *f* *mf*

77

142

Fl. niente *pp* *f* *ppp*

Ob. niente *pp* *f* *ppp*

Cl. niente *pp* *f* *ppp*

Bsn.

Hn. niente *ppp* *f* *ppp*

Tpt. niente

Tbn. *ppp* *f* *ppp*

Perc. China Cymbal arco *p* *f*

Pno. *f* *mp* stroke lower strings *8va*

8va stroke upper strings

Ped.

S. Solo some of those spec - tral or il lu-so-ryap-pea-ran-ces which take place from the po-wer of re-frac - tion in the at-mos - phere

Vln. I *f* *ppp* *f* *ppp* gliss.

Vln. II *f* *ppp* *f* *ppp* gliss.

Vla. *f* *ppp* *f* *ppp* gliss.

Vc. *f* *ppp* *f* *ppp* gliss.

Db. *f* *mf* 3

144 $\text{♩} = 108 \rightarrow$

Fl. $\frac{2}{4}$ $\frac{4}{4}$

Ob. $\frac{2}{4}$ $\frac{4}{4}$

Cl. $\frac{2}{4}$ $\frac{4}{4}$

Bsn. $\frac{2}{4}$ $\frac{4}{4}$

Hn. $\frac{2}{4}$ $\frac{4}{4}$

Tpt. $\frac{2}{4}$ $\frac{4}{4}$ senza sord.
air, no tone

Tbn. $\frac{2}{4}$ $\frac{4}{4}$ [tu]
ffp senza sord.
air, no tone

Perc. $\frac{2}{4}$ $\frac{4}{4}$ Bass Drum
wire brushes
attack swirl
ff mp
dampen lowest 2 strings
+

Pno. $\frac{2}{4}$ $\frac{4}{4}$ 8th
ff

S. Solo $\frac{2}{4}$ $\frac{4}{4}$ re-sem-bling the mi-rage of the de-sert? there can be no doubt but si-mi-lar phe
whisper *ff* speak *p*

Vln. I $\frac{2}{4}$ $\frac{4}{4}$ sul pont. *gliss.*

Vln. II $\frac{2}{4}$ $\frac{4}{4}$ sul pont. IV *gliss.*

Vla. $\frac{2}{4}$ $\frac{4}{4}$ sul pont. *gliss.*

Vc. $\frac{2}{4}$ $\frac{4}{4}$ sul pont. *gliss.*

Db. $\frac{2}{4}$ $\frac{4}{4}$ *ff sub.*

147

Fl. *jet whistle* *mf* *ppp*

Ob. *ppp*

Cl. *ppp*

Bsn. *ppp*

Hn. *senza sord.* *ppp* *f*

Tpt. *ppp* *f*

Tbn. *niente* *ppp* *f*

Perc. *attack* *mf* *Sizzle Cymbal* *wire brush* *mf* *dampen G*

Pno. *dampen sim.* *mf* *mp* *pp* *loco* *ff*

S. Solo *mf* *whisper* *pp* *ff* *pp* *hum*

no-me-na called in-to ex-is-tence on the moun-tain tops pa - tu - pai - a' [mm]

Vln. I *gliss.* *mf* *pp* *pizz. (ord.)* *mf* *pp* *mf* *ppp* *f*

Vln. II *gliss.* *mf* *pp* *pizz. (ord.)* *mf* *pp* *mf* *ppp* *f*

Vla. *gliss.* *mf* *pp* *pizz. (ord.)* *mf* *pp* *mf* *ppp* *f*

Vc. *gliss.* *mf* *pp* *pizz. (ord.)* *mf* *pp* *mf* *ppp* *f*

Db. *mf* *f* *p* *ppp* *f*

151

Fl. *f* *ppp* *f* *ppp* *ff* *3* *p* *3*

Ob. *f* *ppp* *f* *ppp* *ff* *3* *p* *3*

Cl. *f* *ppp* *f* *ppp* *ff*

Bsn. *f* *ppp* *ff* *mf*

Hn. *ppp* *ff* *p*

Tpt. *ppp* *ff* *p* *3*

Tbn. *ff* *p* *3*

Perc. [China Cymbal] *p* *f* [Bass Drum] *ff* [China Cymbal] *p* *mf* (open)

Pno. *ff* *8va* *mf*

S. Solo *f* *pp* *mf* *3*

pa - tu - pai - a' and as to the se - vere tramp - ling they in - flic - ted

Vln. I *ppp* *mf* *pp* *ff* *3* *p*

Vln. II *ppp* *mf* *pp* *ff* *p* *3*

Vla. *ppp* *mf* *pp* *ff* *p* *5* *ppp* *mf*

Vc. *ppp* *mf* *pp* *ff* *p* *3* *ppp* *mf*

Db. *ppp* *mf* *pp* *ff* *pizz.* *mf* *3*

155

Fl. *ppp* *mf* *ppp* *ff* *p* *f* *p*

Ob. *ppp* *mf* *ppp* *ff* *p* *f* *p*

Cl. *ppp* *mf* *ppp* *ff* *p* *f* *p*

Bsn. *ppp* *mf* *ppp* *ff*

Hn. *ppp* *f* *ppp* *f*

Tpt. *ppp* *f*

Tbn. *ppp* *f*

Perc. Crotales brass mallets *ff* \oplus dampen

Pno. *ff*

S. Solo it is ve-ry like-ly to have hap-pened af-ter ea-ting to re-ple-tion some unwhole-some food

Vln. I sul pont. *ppp* *mf* *ppp* ord. *f* *pp* *ff* *p* sul tasto *ff*

Vln. II sul pont. *ppp* *mf* *ppp* ord. *f* *pp* *ff* *p* sul tasto *ff*

Vla. sul pont. *ppp* *mf* *ppp* ord. *f* *pp* *ff* *pp* *ff*

Vc. sul pont. *ppp* *mf* *ppp* ord. *ff* *pp* *ff*

Db. *ff* sub.

159

Fl. *mf* *p*

Ob. *mf* *p*

Cl. *mf p* *ppp* *f*

Bsn. *mf p* *ppp* *p*

Hn.

Tpt.

Tbn.

Perc. Bass Drum *mf* Triangle *mp*

Pno. *mf* *pp* *mf* *p*
loco *una corda*

S. Solo *mf*
a peo-ple with-out a-ny know-ledge of the laws of na-ture and ex-cee-ding-ly su-per-sti-tious might be ex-

Vln. I *ord.* *mf* *ppp* *f* *pizz.* *mp*

Vln. II *ord.* *pp* *mf* *ppp* *f* *pizz.* *mp*

Vla. *ord.* *pp* *mf* *pp* *niente* *ppp* *f* *pizz.* *mp*

Vc. *pizz.* *f*

Db. *f*

H

167

Fl. *mf* *pp* *ff* *p*

Ob. *mf* *pp* *ff* *p*

Cl. *ff* *mf* *ff* *p*

Bsn. *mf* *ff*

Hn. *ff* *ff*

Tpt. *ff* *ff*

Tbn. *ff* *ff*

Perc. *ff* *ff* Tambourine thumb-roll

Pno. *p* *f* *ff* *f* *p* *loco*

S. Solo

Vln. I *ff* *mf* *pp* *ff* *p* *mf*

Vln. II *ff* *mf* *pp* *ff* *p* *mf*

Vla. *ff* *mf* *ff* *p* *mf*

Vc. *ff* *mf sub.* *ff*

Db. *ff* *ff*

174

Fl. *fff* *p sub.* *ppp*

Ob. *fff* *p sub.* *ppp*

Cl. *fff* *p sub.* *ppp*

Bsn. *fff* *ppp* *mp* *ppp* *ff*

Hn. *fff* *ppp* *mp* *ppp* *ff*

Tpt. *fff* *ppp* *mp* *ppp* *ff* air, no tone
[tu] *ppp* air, no tone

Tbn. *fff* *ppp* *mp* *ppp* *ff* [tu] *ppp*

Perc. China Cymbal Bongos
drumsticks on membranes dampen
ff *p* *ff* *mp* *pp*

Pno. *ff* *mp* *pp* *f*
una corda

S. Solo [hum] *f* *fff* [sing] *pp* *mf* *p*
[mm] pa

Vln. I *fff* arco *pizz.* *mp* *ppp* arco sul pont. *f*

Vln. II *fff* arco *pizz.* *mp* *ppp* arco sul pont. *f* gliss.

Vla. *fff* arco *pizz.* *mp* *ppp*

Vc. *fff* arco *sul tasto* *ppp* *mp* *ppp* *ff*

Db. *fff* arco *sul tasto* *ppp* *mp* *ppp* *ff*

178 jet whistle

Fl. *p* *ff* *pp* *ff* *mf* *pp* *5*

Ob. *mf* *3* *5* *pp*

Cl. slap-tongue *ff* *pp* *ff* *pp* *mf* *3* *pp*

Bsn. *pp* *ff* *ppp* *ff*

Hn. *ppp* *ff* *ppp* *mf* *ppp*

Tpt. *[ti]* *ff* *ppp* *mf* *ppp* *mf*

Tbn. *[ti]* *ff* *ppp* *ff* *ppp*

Perc. *[Sizzle Cymbal]* *[Triangle]* *dampen* *attack* *ff* *mp* *mf* *dampen all*

Pno. *mp* *mf* *8va* *loco*

S. Solo *whisper* *mf* *ff* *p* *hum* *p* *mf* *p* *[mm]*

Vln. I *ord.* *ppp* *3* *p* *ff* *pp* *non-vib.* *mf* *vib.* *pp* *mf* *ppp* *non-vib.*

Vln. II *ord.* *ppp* *ff* *pp* *mf* *vib.* *pp* *mf* *ppp* *non-vib.*

Vla. *arco* *ff* *pp* *mf* *ppp* *non-vib.*

Vc. *ord.* *pp* *ff* *p* *3* *pp* *f* *ppp*

Db. *ord.* *pp* *ff* *p* *3* *pp* *f* *ppp*

184

Fl. *p* *mp* 3 *pp* 3 *ppp*

Ob. *p* *mp* 3 *pp* 3 *ppp*

Cl. *mp* 5 *ppp* 3 *p* 3 *ppp*

Bsn. *mp* 5 *ppp*

Hn. *f*

Tpt.

Tbn. *f*

Perc.

Pno. *p* 5 3 *ppp*

una corda

S. Solo *ppp* *p* *f* *mf* *re-he*

pai - - - a - - -

Vln. I *ff* *ppp* 3 *p* 3 *ppp*

Vln. II *ff* *ppp* 3 *p* 3 *ppp*

Vla. *ff* *pizz.* *mf* *arco (vib.)* *ppp* 3 *p* 3 *ppp*

Vc. *ff* *pizz.* *mf* 3

Db. *ff*

I

188

Fl. *p* *f* *pp* *f* *fff*

Ob. *p* *f* *ppp* *fff*

Cl. *p* *f* *pp* *f* *fff*

Bsn. *p* *f* *pp* *f* *fff*

Hn. *ppp* *mf* *fff*

Tpt. senza sord. *ppp* *mf* *fff*

Tbn. *ppp* *mf* *fff*

Perc. [Bongos] drumsticks on casing *mp* *pp* *mp* *pp* *mf* *ff* *p* on membranes

Pno. *mf* *fff*

S. Solo [hum] *pp* *fff*

I

Vln. I pizz. *mp* arco *f* *p* *ppp* *fff* sul tasto *gliss.* sul pont.

Vln. II pizz. *mp* arco *f* *p* *ppp* *fff* sul tasto *gliss.* sul pont.

Vla. pizz. *mp* arco *f* *p* *ppp* *fff* sul tasto *gliss.* sul pont.

Vc. pizz. *mp* arco *f* *p* *ppp* *fff* sul tasto *gliss.* sul pont.

Db. pizz. *mp* arco *f* *p* *ppp* *fff* sul tasto *gliss.* sul pont.

192

Fl. *fff*

Ob. *fff*

Cl. *pp* *fff*

Bsn. *fff*

Hn. *mf* *fff* *pp* *fff*

Tpt. *mf* *fff* *fff*

Tbn. *mf* *fff* *fff* *gliss.*

Perc. *ff* *p* *ff* *p* *pp* *fff*

Pno. *mf* *fff* *loco* *una corda*

S. Solo *mf* *fff* *p* *hum* *[mm]*

pa - tu - pai - a' -

Vln. I *ord.* *pp* *fff* *sul pont.*

Vln. II *ord.* *pp* *fff* *sul pont.*

Vla. *ord.* *pp* *fff* *sul pont.*

Vc. *ord.* *pp* *fff* *sul pont.*

Db. *ord.* *pp* *fff* *sul pont.*

195

Fl. *ppp* *fff* flz.

Ob. *ppp* *mf* *fff* flz.

Cl. *ppp* *fff* flz.

Bsn. *mp* *fff* *mp*

Hn. *gliss.* niente *fff*

Tpt. *gliss.* niente *fff* flz.

Tbn. *gliss.* niente *fff* flz.

Perc. China Cymbal (drumstick) dampen Tambourine thumb-roll *fff*

Pno. *fff* *mp*

S. Solo sing *f* *fff* *f* [ah] ord. 'pai - a - re - he

Vln. I *ppp* *mf* *fff* sul pont.

Vln. II *ord.* *f* *ppp* *fff* sul pont.

Vla. *ord.* *f* *ppp* *fff* sul pont.

Vc. *gliss.* niente *ppp* *f* *ppp* *mp* *fff* *mp*

Db. *ord.* *mp* *fff* *mp*

200

Fl. *p sub.* *mf* *pp* *ppp*

Ob. *p sub.* *mf* *pp* *ppp*

Cl. *p sub.* *mf* *pp* *ppp*

Bsn. *fff sub.* *pp* *ff*

Hn. *pp* *ppp* *mf* *ppp*

Tpt. *pp* *ppp* *mf* *ppp*

Tbn. *gliss.* *niente* *ppp* *mf* *ppp*

Perc. *China Cymbal* *Sizzle Cymbal* *drumsticks* *fff*

Pno. *fff sub.* *ff*

S. Solo *fff* *gliss.* *[ah]*

Vln. I *ord.* *pp ord.* *mf* *pp*

Vln. II *pp ord.* *mf* *pp*

Vla. *pp* *mf* *pp*

Vc. *fff sub.* *pp ord.* *ff*

Db. *fff sub.* *pp* *ff*

203

Fl. *f*

Ob. *f*

Cl. *f* *ppp*

Bsn. *f*

Hn. *ppp*

Tpt. *ppp*

Tbn. *ppp*

Perc. Tam-tam *ppp*

Pno. *ppp sub.* 8th

S. Solo *f*
let us be

Vln. I *p*

Vln. II *f* *p sub.*

Vla. *f sub.* *p* *ord.*

Vc. *p*

Db. *p*

209 **I**

Fl. *ff* 5 *f* 3 *f* 3 5

Ob. *ff* 5 *f* 3 *f* 3 5

Cl. *fff* *f* 3 5

Bsn. *fff* *f* 3 5

Hn. *fff* *ff*

Tpt. *fff* *pp* *ff*

Tbn. *fff* *pp* *ff*

Perc. *fff*

Pno. *fff* *loco* *f*

S. Solo *fff* *speak* *shout, ad lib.* *f*

thank-ful to pro-vi-dence that our lot has been

I

Vln. I *fff* *f* 3 5

Vln. II *fff* *f* 3 5

Vla. *fff* *f* 3 5

Vc. *fff* *f* 3 5

Db. *fff* *f* 5

sul pont.

sul pont.

sul pont.

sul pont.

211

Fl. *mf*

Ob. *mf*

Cl. *mf*

Bsn. *ffp*

Hn. *pp* *niente* *pp* *con sord.*

Tpt. *pp* *con sord.*

Tbn. *pp*

Perc. *Bongos* *soft mallets* *pp*

Pno. (8)

S. Solo cast a - mong the bles - sings of ci - vi - lized life

Vln. I *ffp*

Vln. II *ffp*

Vla. *ffp*

Vc. *pp* *ord.* *f* *ffp*

Db. *mp* *f* *ffp*

213

Fl. *ff* *mf* 3 3

Ob. *ff* *mf* 3 3

Cl. *ff* 3 3

Bsn. *ff*

Hn. *ff*

Tpt. *ff* *pp*

Tbn. *ff*

Perc. *ff*

Pno. *mf* 3 3

(8).....J sing *mf* *ffp*

S. Solo and the

Vln. I *ff* *mf* 3 3 pizz.

Vln. II *ff* *mf* 3 3 pizz.

Vla. *ff* *mf* 3 3 pizz. arco *mf*

Vc. *ff* 3 *mf* *ff*

Db. *ff*

215

Fl. *p* *f*

Ob. *p* *f*

Cl. *p* *f*

Bsn. *f*

Hn.

Tpt. *ff*

Tbn. *pp*

Perc. *pp* *ff*
Bass Drum
superball

Pno. *p* *ff*
Ped.

S. Solo *ff* *f* *3*
speak
priv' - le - ges of a re - li - gion

Vln. I *p* *arco* *mf* *p* *f sub.* *sul pont.*

Vln. II *p* *arco* *mf* *p* *f sub.* *sul pont.*

Vla. *ff* *mf* *p* *f sub.* *sul pont.*

Vc. *gliss.* *mp* *f*

Db. *gliss.* *mp* *f*

217

Fl. *p* *< f* *pp*

Ob. *p* *< f* *pp*

Cl. *p* *< f* *pp*

Bsn. *fff*

Hn. *pp* *ff* *pp* *f*

Tpt. *pp* *ff* *pp* *f*

Tbn. *ff* *pp* *f*

Perc. *f*
Crotales
brass mallets

Pno. *mf*

S. Solo
the yoke of which is ea - sy

Vln. I *ffp* *ord.* *f* *pp*

Vln. II *ffp* *ord.* *f* *pp*

Vla. *ffp* *ord.* *f* *pp*

Vc. *fff* *pp* *f*

Db. *fff*

220

Fl. *ff* *pp* *ff*

Ob. *ff* *pp* *ff*

Cl. *mf* *p*

Bsn. *mf* *ff*

Hn. *ppp* *ff*

Tpt. *ppp* *ff* *pp*

Tbn. *ppp* *ff* *pp*

Perc. *dampen* *Bongos* *drumsticks* *ff*

Pno. *mf* *ff* *8va--*

S. Solo (8)..... *loco*

and the bur - den of which is light

Vln. I *ff* *ppp* *ff* *pp* *ff sub.* *sul pont.* *ord.*

Vln. II *ff* *ppp* *ff* *pp* *ff sub.* *sul pont.* *ord.*

Vla. *ff* *mf* *p* *ff sub.* *ord.*

Vc. *>pp* *mf* *ff*

Db. *mf* *ff*

101

K

229 jet whistle

Fl. *ff* *mf* jet whistle

Ob. *mf* *pp* *f*

Cl. slap-tongue *ff* *mf* *pp* *f*

Bsn. *mf* *pp* *f*

Hn. air, no tone sim. sempre

Tpt. [tu] *ff* air, no tone *p* [t] *ff* [tu] *ff* sim. sempre *p*

Tbn. [tu] *ff* [t] *ff* [tu] *ff* sim. sempre *p*

Perc. [Sizzle Cymbal] [China Cymbal] [Bass Drum] wire brushes attack swirl stop [Bongos] swirl [Bass Drum] swirl

ff *mp* *pp* *ff* *p*

Pno. stroke upper strings *8va* dampen lowest 2 strings *8va* *mf* *ff*

S. Solo whisper *ff* *p* speak *mf* sempre *3* whisper *pp*

[ss] to ba-nish all that re-mains of the old su-per-sti-tions of the coun-try [ss]

Vln. I II *ff* *p* *ff* *mf* *pp* con sord. *gliss.* *b* *IV*

Vln. II *f* *pp* *ff* *mf* *pp* con sord. *gliss.* *b* *3*

Vla. *pp* *ff* *ppp* con sord. *f* *pp* sul pont. *3* *mf*

Vc. *ff* *pp* *ppp* con sord. *f* *pp* sul pont. *3* *mf*

Db. (pizz.) *ff* arco, con sord. II *pp*

233

Fl. *pp* *< ff* *p* *f*

Ob. *p* *< ff* *p* *f*

Cl. *p* *< ff* *pp* *< ff* *p* *f*

Bsn. *p* *< ff* *p* *f*

Hn. *pp* *< ff* *ppp* *f*

Tpt. *[t]* *ff* *ppp* *f*

Tbn. *[t]* *ff* *ppp* *f*

Perc. *attack* *ff* *ppp* *f* *Cabasa* *↑ long* *Tam-tam* *mp*

Pno. *dampen sim.* *loco* *sffz* *mf*

S. Solo *ff* *hum* *pulse 3* *ff* *pp* *5* *pp* *speaking* *mf* *and to dif-fuse*

Vln. I *ff* *sul pont.* *pp* *< ff* *ord.* *IVIII V III sim.* *p* *f*

Vln. II *ff* *sul pont.* *pp* *< ff* *ord.* *p* *f*

Vla. *p* *< ff* *pp* *< ff* *ord.* *p* *3* *3* *f*

Vc. *p* *< ff* *pp* *< ff* *ord.* *p* *3* *3* *f*

Db. *ff* *pp* *< ff* *ord.* *mp* *f*

238

Fl. *jet whistle*
p *ff*

Ob.

Cl. *slap-tongue*
ppp *f*

Bsn. *ppp* *f*

Hn.

Tpt. *air, no tone*
[tu] *ff* [t] *pp* *ff*

Tbn. *air, no tone*
[tu] *ff* [t] *pp* *ff*

Perc. *Bass Drum*
wire brushes
swirl *p* *ff* *p* *attacks* *swirl*

Pno. *dampen lowest 2 strings*
8th *ff*

S. Solo *sing* *hum* *whisper* *speak*
f *p* *f* *p* *ff* *pp* *mp*
a-mong the a-bo-ri-gi-nies of our a-dop-ted land pa' [mm] tu' the bles-sings of an en

Vln. I *sul pont.*
ppp *f* *ppp* *ord.* *gliss.* *ff*

Vln. II *sul pont.* *sul tasto*
ppp *f* *ppp* *f* *ord.* *gliss.* *ffp* *ff*

Vla. *sul pont.* *sul tasto*
ppp *f* *ppp* *f* *ord.* *gliss.* *ffp* *pp*

Vc. *sul pont.* *ord.* *gliss.*
ppp *f* *ppp* *f* *pp* *ff*

Db. *pizz.*
f

106

246

Fl. *G.P.* jet whistle *ff*

Ob.

Cl. slap-tongue *ff*

Bsn.

Hn.

Tpt. *sim. sempre*
[tu] *f* [t] *p* *f*
sim. sempre

Tbn. [tu] *f* [t] *p* *f*
sim. sempre

Perc. *attack* *mf* *attack* *f* *swirl* *p* *attack* *f* *attacks* *ff* *swirl* *violent* *stop* *ppp*

Pno. *dampen sim. sempre*
mf *f* *stroke lower strings* *ff*

S. Solo *p* *whisper* *f* *ord.* *mf* *croaky* *3* *re - li - gion*

Vln. I *G.P.* *fpp* *niente*

Vln. II

Vla.

Vc. *pizz. (ord.)*

Db. *f* *arco* *IV* *gliss.* *f* *ppp*